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JULY
1948

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AMATEUR RADIO

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EDITORIAL



In this issue you will find the official announcement of the formation of the Post-War R.A.A.F. Radio Reserve. This information will be received with satisfaction by a great number of Australian Amateurs who served in the R.A.A.F. during the War. The offer of the W.I.A. to assist in launching the plan and recruiting personnel has been accepted by the R.A.A.F., thus the W.I.A. is in a somewhat similar position to that of 1929, when the original R.A.A.F. Wireless Reserve was launched. On that occasion, the conception of such a Reserve emanated from the W.I.A., was accepted by the R.A.A.F., and up to the outbreak of War, the Wireless Reserve was a consistent W.I.A. activity. This time, although the W.I.A. occupies an analogous position, the scope and aims of the project are on a scale never dreamt of in the pre-war days. Then, a Reserve of 200 was considered a very valuable contribution; today, the R.A.A.F. seeks 2,000. Then, the Service was seeking only Amateurs' skill as telegraphists; today, this qualification is of small moment, it is technical aptitude, ability and knowledge that is sought.

The reasons for this changed requirement are of considerable interest. Before the last war, the value of radio generally, in time of war, appeared to be its inherent ability to provide communications between two points without the necessity of running landlines or cables, or between such points where line communication was impossible. The war brought an entirely new conception of the vital part which radio could play, with the introduction of Radar, the amazing growth of Radio Navigational devices and the building up of complex operational systems, such as Fighter Control. At the same time, with the war being fought on a global scale at an ever-increasing tempo, the inadequacy of the Morse code as a method of conveying intelligence between two points became apparent. It was too slow, required too many personnel, with specialised operator training and took up too

many channels in a very much overloaded frequency spectrum. An interim solution for main point to point circuits was provided by the introduction of multi-channel radio-teletype systems and extended use of R/T for "hot" operational channels. The major problems still remained, however, and with the post-war development of atomic weapons, supersonic rockets and aircraft, are further accentuated. It is outside the scope of this Editorial to discuss future Service Radio operational requirements, but sufficient has been said to indicate clearly why Morse code proficiency is no longer a basic radio requirement.

In the technical and administrative field lies the major contribution which Amateur Radio can make to the R.A.A.F. Radio Reserve. It has often been said, however, and quite correctly too, that the technical standard of the average Amateur is fairly low. As Amateur Radio is a hobby and not the life's work of the majority of Hams this fact is understandable and appreciated. However, to have interested himself in radio sufficiently to pass the necessary examination and secure a station licence is a definite indication of technical aptitude, and technical aptitude plus well directed training spells technical proficiency. Another aspect that must not be forgotten is that the average Ham has a wealth of practical experience, the value of which was proved countless times during the war. Part of the task of the Radio Reserve, therefore, is to take an Amateur, build on his practical experience by familiarising him with Service equipments, and through proper training, to fill in the gaps in his technical knowledge. This is only half the story, however, as one of the great features of the plan is the complete integration of the Radio Reserve with the R.A.A.F. at all levels. Amateurs will be trained in accordance with their qualifications, Service and general experience for appointments ranging from Senior Staff positions in the Directorate of

(Continued on page 8)

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One-Tube Preamplifier—The “R-9’er”

The “R-9’er,” which has become quite well known in Australia, is re-printed from G.E.’s “Ham News” by the request of quite a number of members. We are indebted to VK2AGH for furnishing the Magazine Committee with this information.

Are you having trouble picking those weak DX signals out of the noise? The “R-9’er,” using a single 6AK5 miniature tube, is designed to do exactly that. The “R-9’er” is an electronic impedance-matching devise and a broad-band preamplifier, designed to work primarily on the 28 and 50 Mc. bands.

PERFORMANCE CHARACTERISTICS

The gain which can be achieved by this unit depends upon how well your antenna is matched to your receiver, but the minimum gain which may be expected is 30 decibels—about 5 S points! This gain comes about in two ways. The “R-9’er” once it is tuned, automatically matches your receiving antenna to your receiver. In the usual Ham shack this problem is not given much consideration, but a tremendous gain can be obtained by a proper match. The problem is doubly important on the 28 and 50 Mc. bands, as at these frequencies the input impedance of the receiver may vary widely from its stated value. For example, a widely known communication receiver, stated to have an input impedance of 250 ohms, actually had an input impedance of 1500 ohms on 28 Mc. Tests made recently show that the average gain experienced, merely by properly matching the receiving antenna, is from several db to as high as 30 db.

In addition to this gain, the 6AK5 miniature tube acts as a broad-band r.f. amplifier stage, giving an additional gain of approximately 30 db. This tremendous gain is possible only because of the electrical characteristics of the 6AK5. This tube has a transconductance of 5000 micromhos, which means that

a voltage gain of approximately 35 can be achieved with a plate load of 7000 ohms, as used in the “R-9’er.” This amount of gain has been available only by former tubes at narrow band-widths and with higher noise levels. The 6AK5 has been designed to give these high gains at wider band-widths and at lower noise levels.

Here then is what the “R-9’er” will do for you—60 decibels gain (or more) if your present receiving antenna is not matched, or, assuming it is perfectly matched, a 30 decibel gain. In tests conducted at W2RDL’s shack, “R-9’er” brought in signals which couldn’t ordinarily be heard even with the use of the b.f.o.!

CIRCUIT DETAILS

Referring to Fig. 1, the circuit consists essentially of a broad-tuned grid and broad-tuned plate circuit, a standard cathode bias system, and an adjustable screen supply. The grid and plate circuits are identical except that capacitor C5 is employed as a plate blocking capacitor so that the plate tuning capacitor may be grounded.

In the grid circuit, capacitors C1 and C2 form the impedance matching network. A regular two-wire transmission line from the receiving antenna is

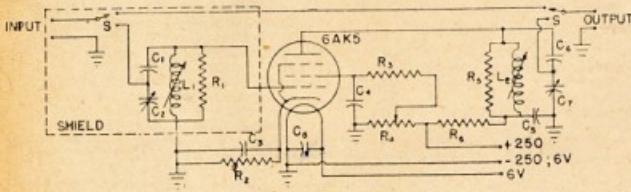


Fig. 1—Circuit Diagram of the “R-9’er”

C1, C6—5 pF. fixed ceramic*

C2, C7—100 pF. variable.

C3, C4, C5, C6—500 pF. 400 volt mica.

L1, L2—Slug-tuned ceramic formers.

14 Mc.—See text.

28 Mc.—16 turns of No. 26
enamel close wound.

50 Mc.—8 turns of No. 26
enamel close wound.

R1, R5—7000 ohm, ½ watt†

R2—200 ohm, 1 watt.

R3—15000 ohm, ½ watt.

R4—25000 ohm, 4 watts potentiometer.

R6—10000 ohm, 1 watt.

S—D.P.D.T. wafer switch.

* See text.

† Refer to text for location of resistors.

brought to the input terminals, or a single wire antenna may be used and connected to the input lead which connects to the junction of C1 and C2. Inductance L1 must be tunable so that resonance may be achieved after C2 has been adjusted to match the antenna. Once C2 and L1, as well as C7, and L2 have been set, no further tuning is re-

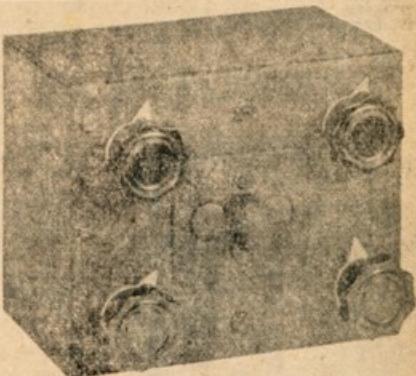


Fig. 2—Front view of the “R-9’er.”

quired for operation on that particular band.

With the constants shown, the “R-9’er” will match any input and output between 16 ohms and 2700 ohms. This may be calculated:

$$\text{Impedance} = \frac{7000}{\left(\frac{C1 + C2}{C1} \right)^2}$$

The same formula may be applied to the plate side by substituting C6 for C1 and C7 for C2.

All constants given must be strictly adhered to in duplicating the “R-9’er,” as even the values of the by-pass capacitors are important. R1 and R5 must be 7000 ohms, as the band-width will be altered and the impedance formula changed if different values are used.

The band-width of the “R-9’er” with the constants as shown is approximately two megacycles on ten meters (28-30 Mc.) and five megacycles on six meters (50 to 55 Mc.), dropping off only one or two db, at each end of the band when it is peaked in the centre of that band-width.

The plate voltage is not critical, and any voltage available in your receiver will operate the 6AK5 satisfactorily.

CONSTRUCTIONAL DETAILS

The "R-9'er" is built in a 3" x 4" x 5" box, with all component parts mounted on the front panel. Fig. 3 shows the essential details of construction. The switch, S, and the potentiometer, R4, are the two controls on the upper part of the front panel, with capacitors C2 and C7 being mounted directly beneath.

The coil box occupies the central portion of the box, and is so arranged that the main support on the coil form, a piece of 1" by 1¹/₂" aluminium, 3" thick, just fits into the central shield on the box, which is also made of 1" thick aluminium. With the coil plugged into the "R-9'er," a solid shield is thus formed which completely isolates the grid section from the rest of the circuit. It is very important to have complete shielding between grid and plate. The polystyrene base on the coil is 1¹/₂" by 1¹/₂", and the aluminium front of the coil

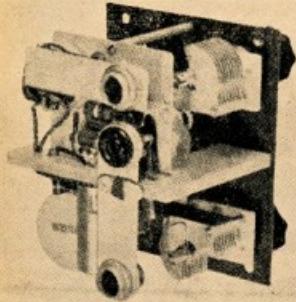


Fig. 3—Rear view of "R-9'er" on its side showing constructional features.

measures 2" by 1¹/₂". One corner is cut on the polystyrene base in order to provide a method of keying the coils for proper insertion. The cut-out in the panel is similarly keyed. The coil forms are mounted on a thin piece of aluminium (see Fig. 4) so that the centre of the grounding strip contacts a grounding spring mounted on the 1" aluminium shield. This grounding spring is identical to the one shown in Fig. 3 which is mounted on the rear of the shield. The purpose of the latter spring is to contact the inside of the box, in the rear, for good grounding.

The pins on the coil fit into two crystal sockets. These sockets are mounted on the 1" wide aluminium shield.

The 6AK5 tube is mounted horizontally. Fig. 3 shows how the grid pin on the tube socket projects on one side of the shield with the remainder of the pins on the other side of the shield. Switch, S, is mounted on this side of the shield. The input connection is mounted on a third shield which cuts through the centre of switch, S, shielding the input and output circuits.

Placement of parts is not too critical if adequate shielding is maintained. Lack of shielding may cause unwanted regeneration and possible spurious oscillations.

OPERATING ADJUSTMENTS

Input and output connections should be made to the "R-9'er" with well-insulated wire, preferably co-axial cable. Switch S should be set so that the amplifier is cut out, and the receiver tuned to a signal in the approximate centre of the band. A local signal is preferable. The amplifier should then be cut in by the switch, the screen potentiometer adjusted to give maximum voltage, and the grid condenser (C2) tuned together with L1 until the signal is heard. The signal should then be peaked with an R-meter or an output meter by tuning L1, adjusting C2, retuning L1, re-adjusting C2, etc., till the signal is maximum. This process should be repeated with the plate circuit, C7 and L2.

If C1 is found to be at full maximum or minimum capacity, the length of the antenna feeder must be altered. Conversely, the length of the line between the "R-9'er" and the receiver must be altered if C7 does not tune near its middle capacitance. To correct this situation, add a quarter-wave length of line and prune this line until the capacitor peaks the signal at approximately centre scale. For 50 Mc. operation the output line should be as short as possible, to ensure minimum capacitance on the output side.

After the entire unit has been peaked, the screen potentiometer (R4) should be adjusted for maximum output, keeping the voltage on the 6AK5 screen as low as possible, with output as high as possible. Once all adjustments are made for both coils, it is only necessary to peak capacitors C2 and C7 when changing bands, as the coils remain at resonance after once being adjusted.

Coil data for L1 and L2 is given for only 28 and 50 Mc. operation, although the unit will operate on any band.

THE "R-9'ER" FOR 14 Mc.

The coils are the most important part of the pre-amplifier. Unless the coils are of a sufficiently high Q very little gain may be achieved. This is because the band-width of the "R-9'er" is jointly dependent upon the Q of the coil, the resistance across the coil and the distributed capacitance in the circuit. It is desirable to have a coil with a sufficiently high Q that the band-width is effectively dependent only upon the resistance across the coils and the distributed capacitance. (R1 and R5, referring to the original diagram.)

Coils wound with a large diameter wire which is poorly insulated will have a low Q. Similarly, the Q will be lowered if it is necessary to overwind the coil, that is, if more than one layer of wire is used. High Q coils will be achieved if the wire is of a diameter which will allow the proper number of turns to fit exactly onto the coil form in one layer. It is very important also that the wire be well insulated. Silk-covered wire would be preferable. Avoid enamel-wire if the enamel seems the least bit cracked or worn.

The "R-9'er" will work on 14 Mc. but it will be necessary to make several minor changes if optimum performance is to be realised. The first change should be to remove R1 and R5 from the cir-

cuit. These should be replaced in duplicate on the 28 and 50 Mc. plug-in coils and wired directly across L1 and L2. In other words, L1 and L2 on the 28 Mc. coil should each have a 7000 ohm resistor added in parallel to them. The 50 Mc. coil should be changed similarly.

It is necessary to make this change as the 14 Mc. coils will require a different resistance in parallel and it is necessary to remove the internal resistance in order that the proper resistance will be added to the circuit automatically when coils are changed.

The 14 Mc. coil should be wound with 25 turns of very small wire. As explained before, this wire should be small enough to allow all 25 turns to be placed in one layer. The resistance to be added across the coil will now depend upon the Q of the coil in the circuit. For example, if the coil Q is 100, the resistance to be added across both coils should be 25000 ohms. For a Q of 75, 36000 ohms should be added. For a Q

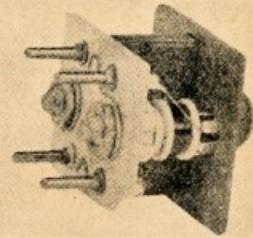


Fig. 4—View of "R-9'er" Coil Box (note that Coil is mounted on a Polystyrene base).

of 50, the resistance should be omitted entirely.

Inasmuch as very few of us will be able to measure the actual Q, it is suggested that the resistance be omitted entirely on the 14 Mc. coils. If the "R-9'er" then seems to be too sharp and covers too narrow a band, resistors should be added across L1 and L2 on the 14 Mc. coil until the band-width is approximately 1 megacycle. The band-width can be judged roughly by tuning the receiver across the band and listening for the slight amount of background noise which indicates that amplification is being achieved. When the increased background noise covers approximately one megacycle on the dial the band-width may be considered to be approximately one megacycle. After resistors have been added which broaden out the band-width to this value, the coils should be properly adjusted.

Another change that is suggested for operation on 14 Mc. is to make C1 and C6 10 pF. instead of 5 pF. This change will give added sensitivity on 14 Mc. and will not affect operation on 28 and 50 Mc. appreciably.

With changes made as described above the "R-9'er" will give appreciable gain on the 14 Mc. band, although it will not be as great as that obtained on 28 and 50 Mc.

Propagation of Radio Waves

BY N. S. SMITH*, VK3YY

* Although not 100% practical, it was thought that a brief article on the factors governing the propagation of radio waves might be of interest to those who have not had time to study this aspect of radio. An understanding of propagation fundamentals helps one to visualise why the bands go dead at times, why fading occurs, and other phenomena.

It is proposed to condense this into two articles although the subject could cover much wider fields.

- 1 (a) Basic nature of a radiated wave.
- (b) Propagation at medium frequencies (550-1600 Kc.).
- 2 (a) Propagation in the range 3-30 Mc.
- (b) Propagation above about 30 Mc.

1a.—A radio wave propagated from an aerial consists essentially of two components:

- (i) A field parallel to the radiator and termed the "electrostatic," "static" or "electric" field.
- (ii) An electromagnetic or magnetic field at right angles to (i) also termed "induction field."

These two fields at right angles to one another are also each at right angles to the direction of propagation of the wave. This sounds complicated, but Fig. 1 will help in understanding this point. This illustration should be considered as a section of the radiated

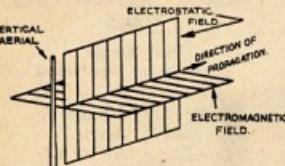


FIG. 1.

wave, which actually exists all around the aerial. The "induction field" (ii) dies away fairly rapidly, inversely proportional to the square of the distance from the aerial. In other words if the signal is of a certain value at a distance "d," it is only one-quarter

$$\frac{1}{d^2} = \frac{1}{2^2} = \frac{1}{4}$$

as strong at twice the distance (2d). It is thus considered as contributing but slightly to the radiated signal value at a distance.

The "static" or "radiation field" is the useful radiation from an aerial and its value varies **inversely** as the distance, that is, at twice the distance it is half as strong. A term commonly used in referring to a radiated signal is "polarisation." This merely indicates the plane in which the "radiation field" lies, thus since this field is the one parallel to the aerial, a vertical aerial radiates a vertically polarised signal, and a hori-

zontal aerial a horizontally polarised signal. Actually, after the wave has travelled some distance from the aerial the polarisation may become more complex due to reflections from the ground etc.

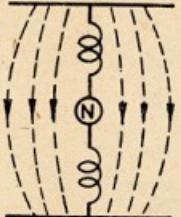


Fig. 2a.
Field building up.

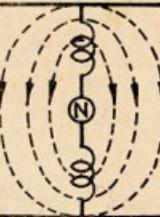


Fig. 2b.
Start of collapse
of field.

It is rather difficult to explain briefly the process of radiation from an aerial, but the following elementary description may assist in visualising this complex action. When an aerial is connected to a transmitter it is supplied with alternating energy at relatively high frequencies. Thus the fields referred to above are building up and collapsing at a high rate. This means that the aerial is being fed with alternate positive and

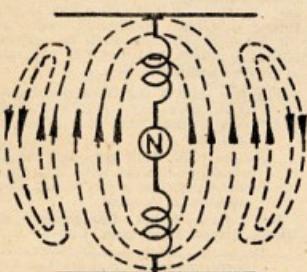


Fig. 2c.—Field of opposite polarity building up and causing radiation of part of previous field.

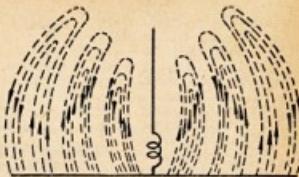


Fig. 2d.—Radiation of field from a grounded aerial in annular loops.

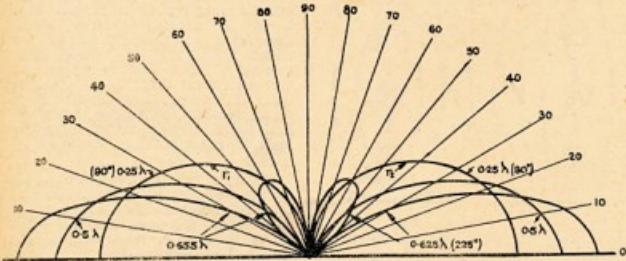
negative charges of electricity. It is a fundamental law that whenever the current flowing in a circuit changes, energy is radiated from the circuit in the form of electromagnetic waves, which travel out into space with the velocity of light. Thus in any alternating current circuit there is always a radiation of energy, the amount radiated being related to the frequency of the a.c., more energy being contained in high frequencies than in low.

Consider a positive half cycle of energy building up a field. After it has reached its maximum value it commences to collapse, and in doing so tends to change its direction (Lenz's Law). The negative half cycle however is now arriving at the aerial and commencing to build up a negative field, this is in the same direction as the **collapsing field** and tends to repel it from the aerial, giving rise to radiation. This process is repeated every half cycle and thus the energy is radiated from the aerial. Figures 2a, 2b and 2c illustrate this process.

A moment's thought will show that if the fields are changing at a slow rate (such as 50 cycles/sec.) there will be time for a full collapse of one half cycle before the other one builds up to reasonable strength. That is why radiation from power lines is relatively weak, increases through the audio frequency band, and improves rapidly as the radio frequency field is entered. Such is a brief elementary picture of radiation, in which, of course it will be appreciated, many factors are not considered.

1b. Propagation at medium frequencies (550-1600 Kc.).—The medium frequency band is useful in providing broadcast services up to about 80-150 miles radius, which area may be regarded as the primary service area of the station. Signals however are also received at several hundred miles distance at night time, providing a limited secondary service area. The primary service area is provided by what is termed "the ground wave." This is the wave propagated over the surface of the ground at low angles to the horizon, and thus requires an aerial having maximum propagation at low angles, and minimum "sky wave" radiation as explained hereafter.

Fig. 3a shows the desirable radiation pattern for a broadcast aerial. Fig. 3b shows the radiation patterns of three aerials, $\frac{1}{4}$ wave, $\frac{1}{2}$ wave and $\frac{3}{4}$ wave. An examination shows that the 0.625 λ ($\frac{3}{4}$) has a nice low angle major lobe, but unfortunately has an appreciable lobe at 60°. The half wave (0.5 λ) has no high-angle lobe but has radiation at higher angles than the $\frac{1}{2}$ one. In practice it has been found that an aerial of 0.53 to 0.56 wavelength gives very good



NEW ELECTRICAL STANDARDS

THE "ABSOLUTE" UNIT

Many of our readers will have heard of the impending change in the international standard for the Ohm, the Volt, the Ampere, etc., and may have read announcements that the laboratories of the world, including the National Physical Laboratory in England, the National Bureau of Standards in the U.S.A., and their equivalents in France, Germany and U.S.S.R., have adopted new values from the 1st January, 1948.

These new values, which are in accordance with decisions taken by the International Committee of Weights and Measures at Paris, in October, 1946, are termed "absolute" units and are based on the familiar centimetre, gramme, second (C.G.S.) system. They replace the existing "international" units.

time ago to have their testing equipment calibrated on the new system, and an announcement describing the application of the change to Australian electrical standards is shortly expected.

SIGNIFICANCE OF CHANGE

In the first place, the values of these fundamental quantities are the foundation on which the entire structure of accurate electrical measurement is built. For some types of work, comparative values are quite sufficient, and comparisons can be made to a high degree of precision. But the engineer who relies on comparative values sooner or later comes up against the hard fact that there is no substitute for knowing where he stands in relation to the true, or accurate, value.

The following table shows the change in values:-

1 international ohm	= 1.000495 absolute ohms
1 international volt	= 1.00033 absolute volts
1 international ampere	= 0.999835 absolute amperes
1 international coulomb	= 0.999835 absolute coulombs
1 international henry	= 1.000495 absolute henries
1 international farad	= 0.999505 absolute farads
1 international watt	= 1.000165 absolute watts
1 international joule	= 1.000165 absolute joules

Preparations for this change in Australia have already been made. It is known that the Australian National Standard Laboratory took action some

Consider, for example, the building of a large turbine-generator. This job, a serious business, may take a year or more and requires large amounts of

material and the efforts of many people. Once it is completed, the engineers make careful tests to measure the unit's efficiency. These tests form the basis for determining the machine's performance, and also serve as a guide towards the improvement of future machines. The difference in efficiency between successive machines is necessarily small; a slight error in measurement could mask improvements which the design engineer spent much effort in incorporating into the machine. The time between tests of the original machine and its improved counterpart may be two years; thus the measurements must be accurate in the true sense that we go back to fundamental standards and are not expressed on a day-to-day comparative basis.

In the second place, a careful engineer or physicist often makes checks by independent methods to verify the soundness of his assumptions. Those most concerned with accurate measurements have occasion to make similar tests to ascertain the validity of the units with respect to their relation to other units in the meter-kilogram-second system. For example, the force on two parallel current-carrying conductors is calculated from an expression embracing forces and lengths as well as electrical quantities. If the electrical quantities are not exactly determined, there will be an inequality in the equation.

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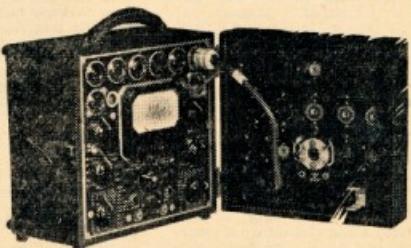
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THE AR7 FOR HAM BANDS

BY C. H. CASTLE*, VK5KL

Many of us have been fortunate to obtain from Disposals the Australian-made Communications Receiver well known as the AR7. Main disadvantage of most of these Receivers was the high noise level to signal ratio, especially on the highest frequency band. After months of trying for optimum performance, the following improvements are suggested, taking each section individually, as was found to improve performance.

POWER As originally there was always trouble with the 6X5 SUPPLY rectifier, plate to cathode shorts, and constant blowing of fuses, and at times burning up of the Yaxley switch used to change from off position to a.c. or d.c. The first major change was to replace the power transformer with a normal type 385 v. aside at 125 Ma., 6.3 v. filament and 5 v. for a 5Y3 rectifier. The Yaxley switch was dispensed with, and replaced with a toggle switch for switching on and off the a.c. input.

Fusing was changed to the use of one globe, and holder, in the centre tap return to earth. All chokes and by-pass condensers associated with the vibrator section were removed, but the filter network in the a.c. input was retained. After re-wiring the receiver filaments in parallel to take the 6.3 volts, tests showed that the noise level was already reduced.

AUDIO Only addition here was the insertion of a 2 Megohm resistor from plate of 6V6 to plate of 6G8 to provide parallel inverse feed-back.

SECOND DETECTOR The pot and resistor combination used as a noise limiter was disconnected in favour of 1 Megohm resistor from B plus to screen and 0.1 uF. by-pass. An alternative being tested is the use of a 6C8 as infinite impedance detector using one triode and a 6H6 mounted under the chassis as a series noise limiter. The second half of the 6C8 will be used as the first audio. The potentiometer controlling the noise limiter will be in normal position on the front panel. Addition of this will bring the receiver up to modern standards.

IF CHANNEL First item is to renew the crystal gate, also the second and third i.f. transformers because most were never impregnated enough to keep moisture out, hence performance is low. 6SK7s replace the 6U7s and the necessary re-wiring done. Replacing of the screen resistors is a must as most, you will find, have increased their resistance by use. Re-alignment of the i.f.s. can now be done as per usual practice.

MIXER Here is the heart of the receiver and of course received most attention. After weeks of comparing different combinations of mixer-

osc. circuits etc., final choice was the converter ECH35. This was found to be equal to the separate osc. systems tried, for signal-to-noise ratio, and made for simplicity, as it is not then necessary to have an osc. tube mounted underneath the chassis. The original tube (6K8) works satisfactorily even at 28 Mc., but inherent noise level is high. As you get into the high frequencies the 6K8 tends to super-regenerate in the osc. section, and a high noise level is the result. Also the signals are not clean cut, and osc. drift is bad.

The first necessity is stabilising the oscillator plate voltage. A VR105 was installed in the spare socket of the power supply, and a fifth lead run to the receiver, replacing the 4-pin plug and socket with a 5-pin. Taking out the 50,000 ohm dropping resistor and using a 6,000 ohm wire wound in the regulator circuit in the power supply, cures all oscillator drift. The secret to success with the ECH35 at 28 Mc. and higher, is to use a 20,000 ohm oscillator grid resistor instead of the normal 50,000. This immediately increases the oscillator grid current to about 500 micro-amps., and it is necessary to reduce the oscillator plate tickler coil turns until 200 micro-amps. grid current is obtained.

NOTE.—No. 1 pin must be earthed, so as to earth the coating on the tube. Now the receiver will start to perform and in the writer's case just replacing the 6K8 with the ECH35 showed an increase of two S points on the meter on a constant signal. Re-alignment of the circuits improved reception all round.

R.F. STAGES Choice here of high gain tubes was for 6AG5s because the full 250 volts can be used on the plate. Replacing of the tube sockets is necessary and because of the sharp cut off characteristics of the tubes, a.v.c. was disconnected and circuits re-aligned.

COILS For 28 Mc. take an "E" band coil that normally tunes from 12.5 to 25 Mc., and remove the fixed padding condenser on each coil and remove half a turn from each grid coil (heavy winding). Re-alignment of the oscillator coil variable padders is necessary for the best results. With the set upside down and front to you, the trimmers on the left of each coil box are for low frequency end, those on the right for the high frequency end of the band.

Juggling of these trimmers will give you up to 500 degrees on dial band

spread or less at will, or can be lined up so as to cover 27 to 30 Mc., so covering the new band at 27 Mc.

For 14 Mc., take a "D" band coil. Remove the iron core from the coils and by taking trimmers from an "A" band coil and putting in the "D" band, re-wire as per the "E" band coil for 28 Mc. Re-alignment will give you all the band spread necessary and it will be a pleasure how many more signals you can hear.

With these alterations you will have as good a receiver as they come, with plenty of r.f., i.f., audio gain and low internal noise level. This can be tested as follows: With no aerial on the set and all gain controls full on, the noise level should be low and the receiver immediately becomes alive with the aerial on. The sensitivity and signal-to-noise ratio is really good, and you can sit back feeling that at least you have a good receiver.

No receiver diagrams or photographs are included as this receiver is well known.

EDITORIAL

(Continued from page 1)

Telecommunications and Radar, through Area and Unit appointments to jobs as operators or maintenance personnel on current Service Communications and Radar equipment. Outside the commercial field the R.A.A.F. has three major sources of personnel from which to draw in obtaining the 2,000 odd men required; from Hams and Radio Personnel who served in R.A.A.F. Radio Services during the War, from ex-Radar personnel who are not Hams, and from Amateurs generally.

The announcement of the formation of the Radio Reserve in this issue sets out only general terms of service. It merely intends to indicate that a Radio Reserve is to exist, the conditions of Service and how it fits into the R.A.A.F. organisation. Details of enlistment, qualification requirements and training plans are now being worked out and will be announced as soon as possible.

No information is available concerning the possibility of Army or Navy Radio Reserves being formed, but if either of these Services do take similar action to the R.A.A.F., then the W.L.A. will extend to them the same facilities and co-operation. In the meantime, however, we commend the R.A.A.F. Radio Reserve to you as a means of fitting yourself to serve your Country in time of war in an activity in which you are not only intensely interested, but for which you have proved your aptitude. An enthusiastic acceptance of this scheme will provide yet further proof that our hobby is indeed a National Asset to the Country.

V.E.M.

* c/o. Dept. of Civil Aviation, Darwin, Northern Territory.

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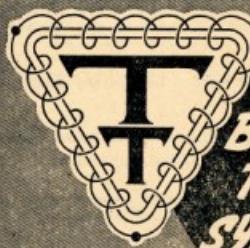
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QUESTIONS AND ANSWERS

One month old and already a lusty infant! It's a case of first come, first served, so if you want a question published don't waste time in sending it in as our space each month is limited.

If you have a question of a technical nature send it in to "Q. and A." "Amateur Radio," Box 2611W, G.P.O., Melbourne, and if suitable it will be published in this column. If you can answer any of the published questions you are invited to send same to the above address. All such replies will be forwarded to the questioner (if he has sent a stamped addressed envelope of suitable dimensions) and also a summary printed.

In the future, when necessary, the question may not be printed again with its answers, but can be identified by the sequential number. Nuff said, so let's to business.

Q.1.—What is the velocity factor of nylex twin power flex?

A.1.—The answer from VK2CS is being held over till next month as we hear a rumour that a lot more of the good oil is about to arrive. The same rumour has it that the flex is hot stuff up to 60 Mc. and that the coloured insulation is better than the clear. Sounds screwy but we'll wait and see.

Q.2.—Why are filter chokes put in the high tension lead where the windings have to be well insulated from the core when it appears that they would work equally well in the return lead at approximately earth potential?

A.2.—VK3SO says: "Mainly habit. Brute force filters work equally well with the chokes in either positive or negative lead. The only catch being that in the good old days when wet electrolytics were available the can of the first electrolytic had to be above chassis potential. In fact if in the negative lead the voltage drop across the choke can be used for back bias after filtering with a simple RC filter."

VK2CS, quoting Terman: "The side of the circuit with the series impedance may be placed in either lead of the filter. However, if one output terminal is grounded, and it is essential that hum voltages in the output be extremely small, then the filter chokes must be placed in the ungrounded lead. This is because of the electrostatic capacity of the transformer secondary to ground."

NEW QUESTIONS

Q.3.—From VK3SO: What is the correct method of determining the load resistance for the modulator when screen modulation is used? In other words, what is the impedance of the screen of an 807 working at 150 v. and drawing a static current of 3 Ma. Is it 50,000 ohms? If not what is it and why?

Q.4.—From VK3BM: Can anyone supply technical data and socket connections of voltage regulator tube marked "Admiralty pattern voltage stabilizer 5458 NSI 280/80?"

FACTS ABOUT NYLEX POWER FLEX

We are indebted to S. W. Grimsley VK3ASG (engineer at 3UZ) for the following.

So many amateurs and enthusiasts are using Nylex twin parallel pair flex cord for feeder lines for various types of antennae that I thought I would try and ascertain from the manufacturers just how this line will perform at radio frequencies.

The Chief Electrical Engineer of Moulded Products Ltd., Mr. T. L. Martin, has been most helpful in this regard, and at his instigation, various tests have been carried out with some rather promising results. Phase velocity figures have not yet been compiled, these I hope to have ready by next month.

Nylex parallel pair flexible cord consists of two 23-0076 insulated conductors laid parallel and joined by a small webbing. The physical dimensions are as follows: radial thickness of insulation in inches, average .034, minimum .026, average overall diameter of each core .114 inches. Average overall dimensions: width is 0.238 inches, maximum thickness is 0.114 inches.

The insulant is not affected by direct sunlight, nor is it affected by oils, grease, acids, alkalies, ozone, or corrosive gases. Nylex insulating material does not absorb moisture, will not support combustion, and is self extinguishing. It does not age or oxidise in service. The cord is obtainable in various colours and each colour has slightly different performance figures.

Characteristic impedance and loss figures are as follows:—

Colour	Impedance in Ohms	Attenuation db/100 ft.
Blue	157	2.08
Black	165	2.48
Red	157	2.82
Brown	155	2.83
White	152	3.02
Yellow	161	3.38
Clear	146	3.73

The loss figures were calculated at a frequency of 45 Megacycles. It would appear by the figures that this line performs reasonably well, at least up to the 50 Mc. band.

Amongst the fraternity who have in the past favoured the clear variety, do I see a few eyebrows raised?

ELIMINATING BACK LASH IN BC348 RECEIVERS

Back lash in the turning mechanisms of the BC348 series receivers can be eliminated by slight adjustment of the screws that mount the tuning condensers. The holes in the bracket on the condenser are sufficiently large to allow the condenser to be moved far enough to take up the back lash. It is only necessary to loosen the screws on the dial end of the condenser mounting bracket and the sub-panel casting. Twist the screw driver blade until the slack in the gears is taken up, and then re-tighten the mounting screws.—QST.

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FIFTY AND UP

SATISFACTORY SCREEN GRID KEYING AND CHEAP R/T

Having employed screen grid keying of my rig using only a 6V6 oscillator and 807 amplifier, I have had many requests for particulars of the circuit used, as back waves seem to cause some problem in other systems. I am therefore forwarding you particulars of the system used here because it is simple and efficient and it can be quickly adapted for quite fair phone.

In the 6V6 screen network the 100,000 ohm-2 meghomh network is adjusted by varying the value of the 2 meghomh resistor to as high a value as is consistent with the crystal oscillating immediately the h.t. is applied. The 60,000 ohm resistor is varied so that the grid current to the 807 is never higher than 5 Ma. on c.w. nor less than 2 Ma. on phone. It is a compromise arrangement, but it works really well here and the original 807 I bought when they first appeared some years ago is still going strong with 700 volts on the anode.

For phone operation, the screen voltage of the 807 MUST be reduced so that it varies with modulation between zero and not more than 300 (the maximum screen voltage). In practice it will be found that a d.c. voltage of 125 is the highest you can use satisfactorily, and the 50,000 ohm resistor by-passed by the 2 uF. reduces the screen to this value.

It will be seen that with the set-up shown, part of the modulation is also applied to the screen of the 6V6, which, in this case, is the crystal oscillator, and whilst it is widely recognised that it is unsatisfactory to modulate a crystal oscillator, I find that there is a very marked improvement in the signal when the modulation is also applied to this screen. The screen dropping resistor to the 6V6 is NOT by-passed for audio for two reasons; firstly I use a dynamic or ribbon microphone and in both cases the bass response is too pronounced and better reports are obtained with the screen resistor unby-passed for audio, secondly the unby-passed resistor very conveniently limits the a.f. applied to this screen.

Keep your 807 anode voltage as high as possible within the tube ratings. On c.w. keying is excellent, and on R/T satisfies those who want phone now and again, without much expenditure.—VK3TY.

REPAIRING LOOSE GRID CAP

Many Amateurs have from time to time met the problem of the best way

to fasten a loose grid or plate cap on a valve. I have solved the problem by removing the faulty cap, thoroughly cleaning and tinning the wire lead. Smear a small quantity of polystyrene cement on both the glass and the inside of the cap, allow to become tacky, similar to using a rubber solution when mending a puncture. Now place the cap on and with a hot soldering iron run in a liberal amount of solder and keep the iron on until the cement bubbles and

Not much news this month from VK6 re 50 Mc. as most activity has taken place on 144 Mc. 6GB and 6GK have been just passed QSOs last week, as such in turn wasted an evening on receiving nights. Probably the shack has been too chilly since the cold spell hit us... 6GB and 6GC still continue to do a fine job re-broadcasting the W.L.A. news each Sunday morning on 50 Mc.

A rather complicated hook-up took place last week-end when several stations co-operated in an attempt to raise the ZS 28 Mc. signal. Broadcast was picked up on 7 Mc. and relayed 28 Mc. to a ZS station to VK5SKW, who relayed the 28 Mc. signal to 6GB on 144 Mc. 6GB in turn was to have relayed on 50 Mc. but because of the poor signal strength on his ZS forgetting to put a 7 Mc. antenna on his receiver! this was not done. However, these stations intend to try again each Sunday at 2.30 p.m.

6AG of Darlington and 6GH of Clarence are the only newcomers to 144 Mc. since last month 6GK has been working regularly with 6KWW and 6GZ over a 12 mile path with excellent results and with various signals being heard. 6GH has receive and transmitter both on the band and has already worked 6KW. 6FC looks like being the next on the band. His converter is ready and he has started a separate transmitter with \$15 in final. Hope the pair of 6KWW and 6LW doesn't constitute the difficulty it did on 50 Mc.

344 Mc. DIGEST

"Whooper" another National two-way phone record smashed and right on the very first 144 Mc. Field Day in VK3, which went under way on Sunday, 6th June. This fine effort was put up by 3ABA/Y5 located at Mt. Macedon for a distance of 122.1 miles. 360 who was operating at Foster North, communicated directly to Vines Hill, Mt. Macedon signals index to Vines Hill were 85.5, 86.7 at Foster North while 3C1 was quoted as 84.83-4. The gear used by 3ABA/Y5 was the mod. osc. employing p.p. 7193s with a 6VRG as the modulator on to a three element beam and the home receiver; 3C1's outfit was listed in last month's issue.

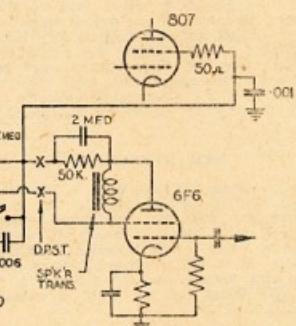
Last month we incorrectly published details of 3ABA/Y5 gear. The following is the correct details: The antenna at the home location is a six element parasitic beam 35 feet high while the main rig of 4 watts is a crystal (147.12 Mc.) job of the 7193s driving 6N7 osc. tripler, 6V6 doubler, and the 833 final.

For the past four weeks activity in VK5 was carried on by 3ACM, 3ADF, 3AKL, 3ASG, 3ABA-Y5, 3EH, 3EM, 3SM, 3ARK, 3AJ, 3LH, 3HE, 3MB, 3TO and 3JO, the latter is chief wins trophy when on m.e.w. via 1 watt transceiver plus a 674-1000 k.c. after the dispensee sale!! 3AG has a rock for 144.158 Mc. in the 144 Mc. T.A.C. band on the band. 3AJ is also on 144.158 Mc. using a six element Yagi—space-squared T matched 35 feet up and a modified SCR522 to the extent of 15 watts; a four arm tower tuner converts the feed into a Marconi B38 receiver of 12 tubes.

3EM is now employing a code wheel so as to ease the wrist while carrying on with the work on jobs. 3TO is lashing out in great style via a 35 foot mast, to support the 15 element stacked half wave dipole, no provides a good checking point with crystals and 3JO has come on to the band. 3ADF did not need his v.t.o. this time to shift it all went by van to a new QTH. It is suspected that the hat will go around at the next V.H.F. Meeting for any surplus petrol components are needed by the former 144 Mc. phone record holders; Ruminyong, here we come.

Restrictions on power supplies in VK5 due to the coal shortage has held up operations on the 144 Mc. band, however in between the gang have been busy hunting up copper tubing. 3JO, 5AX, 5GA and 5MS are the most interested parties, the former is due to visit the V.H.F. club on the 1st of going out possible. Just to hand is the information that the boys are not on the right band yet, looks like more water is needed at the Windmill Club. Activity is under way at Mt. Gambier where 3JA and 5MS are doing the pioneering work. 5JA is a 12 watt three stage v.t.o. outfit on 144 Mc.

Reports from VK2 indicate that the 144 Mc. band is pretty well populated and a number of new voices are heard each week. For cross-town work, most of the locals are going back to the vertical polarization as they find the horizontal too sharp and so keep on moving on to the other. Some of the former prominent 50 Mc. boys are on the band and not with slung-together gear, but the real thing like 2RU who is building a complete rig. Eccentric conditions still prevail. Sydney leaves Newcastle one night then the reverse in the case the next night.



the heat drives out the air inside the cap. This will form a partial vacuum and when dry the cap will be as strong and in the majority of cases better than the original.—VK3XJ.

FEED-BACK TROUBLE IN THE MODULATOR

That feed-back may not be r.f.! said it ever occurred to anyone that it may be supersonic. For those who are using 6L6s as modulators, screening the plate leads and interposing a metal screen between modulator sockets and pre-amplifier-driver stages cured this trouble in VK5XU's shack. The feed-back may be sufficient to cause squeaking in the pre-amplifier stage only when delivering into the transmitter load, which fact makes it harder to trace (five days says 5XU!).

PLUG IN COILS

For a set of experimental Marquis coil formers, solder 18 gauge wire into the pins and bend at right angles. Coil windings can then be easily attached or detached whilst determining the correct number of turns or spacing by twisting the coil ends to the correct tap and then screwing on the upper former.

REMOVING R.F. FEED-BACK FROM MODULATOR

VK5PS reports that the r.f. feed-back into his modulator was found to be coming via the buffer stage and corrective by-passing in that stage cured the trouble. Moral: Look to all sources of r.f. generation when chasing that elusive gremlin, and not the modulated stage only.

THE "TOPS" in AMATEUR COMMUNICATION RECEIVERS

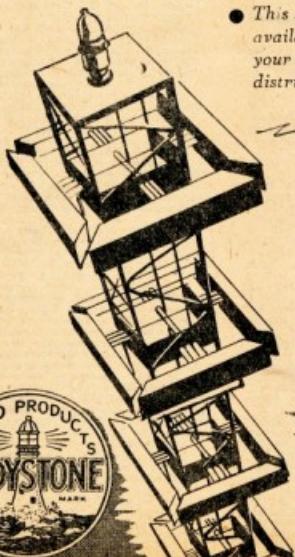
The EDDYSTONE "640"



CHECK THESE BRILLIANT FEATURES:-

1. Receiver has been designed primarily for Amateur Communication purposes, tuning range from 31 Mc/s to 1.7 Mc/s.
2. Designed to operate from Standard A.C. Mains with Inputs of 110 volts 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
3. Inclusive all valves, the "640" is a 9-valve job with combined RF stage, FC, two IF stages, detector-AVC-1st audio, 2nd audio output, noise limiter, BFO and rectifier. The valves used, in that order are EF39, 6K8, EF39, EF39, 6Q7, 6V6, EB34, EF39 and 6X5. These are all international octal based on the Mullard or Brimar versions and are therefore easily replaceable.
4. INPUT IMPEDANCE—400 ohms.
5. TUNING RANGE—
 - (1) 31 to 12.5 Mc/s.
 - (2) 12.5 to 5 Mc/s.
 - (3) 5 to 1.7 Mc/s.
6. TUNING. An electrical band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.
7. I.F. FREQUENCY—1600 Kc/s.
8. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.
9. Sensitivity is better than 2 microvolts input, for 50 milliwatts output, at all frequencies.
10. OUTPUT. Audio frequency output exceeds 3.5 watts.
11. "S" METER. A socket is provided for an external "S" Meter.

● This set is now available from your local distributor

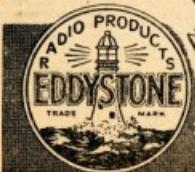


DIRECTORY OF DISTRIBUTORS

- VICTORIA: J. H. MAGRATH & CO.
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- N.S.W: JOHN MARTIN PTY. LTD.
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53 Cameron Street, Launceston

Australian Factory Representatives:

KEITH HARRIS & CO. PTY. LTD. 51 WILLIAM ST., MELB. Tel. MB2119



**EDDYSTONE OFFERS YOU
THE LATEST, MOST DEPENDABLE
COMPONENTS for FM., AM., & PULSE**

FEDERAL, QSL and



DIVISIONAL NOTES

Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Wal Nye (VK2XU), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Clarence House, corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor.—R. Deal, 209 Oberon Street, Coogee.

Zone Correspondents.—**North Coast and Tablelands:**

P. A. H. Alexander, VK2PA, 122 Pitt Macquarie, Newcastle; E. J. Ballantyne, VK2PBT, 122 Pitt Macquarie, Newcastle; **Coffinheads and Lakes:** H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; **Western:** G. J. Russell, VK2OA, 116 Bogart St., Nyngan; **South Coast and Tablelands:** R. H. Rayner, VK2DO, 42 Pettif St., Yass; **Southern:** E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury.

VICARIA—Smith, VK3QG.

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.I.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—**North Western:** B. R. Mann, VK3BM, Quandamooka; **Western:** C. C. Waring, VK3CW, 12 Shire Hall, Quandamooka; **South:** B. Sechrist, VK3BI, 17a Radlan Street North, Ballarat; **North Eastern:** D. Tacey, VK3DW, 18 Harold St., Shepparton; **Far North-Western Zone:** Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; **Eastern Zone:** J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

FEDERAL

FREQUENCY ALLOCATIONS

Listed below are the frequencies at present available for Australian Amateurs, and also types of emission that may be used:

2.8 to 3.0 Mc.	A1, A3,
7.0 to 7.5 Mc.	A1, A3,
14.0 to 14.4 Mc.	A1, A3,
26.96 to 27.23 Mc.	A1, A3, FM,
28.4 to 30.0 Mc.	A1, A3, FM,
50.0 to 51.4 Mc.	A1, A3, FM, FM,
144 to 148 Mc.	A1, A3, A2, A3, FM, Pulse,
288 to 296 Mc.	A1, A2, A3, A3, FM, Pulse,
576 to 585 Mc.	A1, A2, A3, A3, FM, Pulse,
1152 to 1164 Mc.	A1, A2, A3, A3, FM, Pulse,
2304 to 2450 Mc.	A1, A2, A3, A3, FM, Pulse,
5650 to 5850 Mc.	A1, A2, A3, A3, FM, Pulse,
10000 to 10500 Mc.	A1, A2, A3, A3, FM, Pulse,
21000 to 22000 Mc.	A1, A2, A3, A3, FM, Pulse,
30000 and higher Mc.	A1, A2, A3, A3, FM, Pulse

D.C.C. LISTING

Applicants for any one section of the DX C.C. need not submit again cards already submitted in respect of another Section. All applicants' cards submitted are recorded with the necessary details, by the Awards Committee.

PHONE

NIL

C.W.

VK3CN (3)	.....	120
VK3BZ (14)	.....	169
VK3EY (1)	.....	17
VK3YW (12)	.....	165
VK3ED (7)	.....	103
VK3QL (15)	.....	101

OPEN

VK3BG (5)	.....	126
VK3HG (4)	.....	121
VK3EY (2)	.....	117
VK3SK (1)	.....	106
VK3MC (6)	.....	106
VK4HR (9)	.....	101
VK2ACX (8)	.....	100

Figures in parentheses indicate membership number to the DX C.C.

Further changes in prefixes have been notified by various countries.

Swaziland

Basutoland

Bechuanaland

Cyprus

Trinidad and Tobago

Eritrea

Somalia

Trieste

Germany (French)

..... ZS7

..... ZS8

..... ZS9

..... MDS and CTI

..... MDS and MT2

..... MDS and MI8

..... MD4 and MS4

..... MP2

..... D5

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI—Sundays, 1100 hours EST, 7195 Kc. and 2000 hours EST 50.4 Mc. No frequency checks are available from VK2WI.

VK3WI—Sundays, 1130 hours EST 7195 Kc. Spot Frequencies every fourth Tuesday, between 7000 and 7200 Kc. every 10 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI—Sundays, 0900 hours EST simultaneously on 7109 Kc., 14342 Kc. and 52.004 Mc. Frequency checks are given two nights weekly, and the hours are announced during the Sunday broadcasts.

VKSWI—Sundays, 1000 hours SAT on 7196 Kc. Frequency checks are given by VK5SWI on Friday evenings on the 7 and 14 Mc. bands.

VK7WI—Sat. 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 Kc. and 7200 Kc. No frequency checks available.

VK7WL—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O., Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor.—H. T. MacGregor, VK4ZU, "Moquet," Eldon Rd., Windsor.

SOUTH AUSTRALIA

Secretary.—E. A. Barber, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Night.—Second Monday in each month at the Builders' Exchange, St. George's Terrace, Perth.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TAHITIANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., New Town, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

SILENT KEYS

ALEC MARSHALL VK2HM

We regret to record the passing of one of New South Wales' really old time Amateurs. Best known for his work from Armidale on the old 32 metre band, Alec recently made a comeback on 20 metre c.w. Vale to a VK2 veteran.

THE R.A.A.F. RESERVE

During the past two months, the plans for the ultimate Permanent Air Force, the Citizen Air Force and the R.A.A.F. Reserve have gradually shaped themselves, and it is now possible to see the overall constitution of Australia's post-war Air Force. In the early R.A.A.F.'s plans for a huge reserve force, the permanent element (Mr. Drakford) revealed that the proposed strength of the Reserve will total many thousands of officers and airmen. It will consist of—

Members demobilised from the R.A.A.F. who are still classed as active service.

Members of the Permanent Air Force who have completed their initial and subsequent periods of engagement;

Qualified airmen and tradesmen of the commercial aviation industry;

Men who have completed a period of active service in Citizen Air Force Squadrons; Officers whose short-service commissions have expired;

Ex-members of the R.A.A.F. Nursing Service; the W.A.A.F. and the Air Training Corps.

"It is planned," Mr. Drakford said, "that the Permanent Air Force Reserve alone will total 5,000 to 8,000 men, which is based on the estimated number of personnel required to cover urgent war-time tasks and mobile establishments. We would need this figure to bring all existing units up to strength of war establishments and to form such ancillary units as would be required to accompany a mobile task force overseas at short notice."

The Permanent Air Force Reserve (or Active Reserve) will comprise personnel who are immediately available for mobilisation in an emergency in order to bring existing units to war strength and to form additional units required upon the outbreak of war.

The Citizen Air Force Reserve will consist of ex-members and all persons who may be partly trained and who will be available for mobilisation in all categories of the expanded Air Force.

The Permanent Air Force Reserve will be established, in the first instance, from personnel who have served during the 1939-45 war and who are able and willing to undertake such annual or

periodical training as the R.A.A.F. may, from time to time, require. In the initial stages, such training will be confined to lectures, films, and distribution of training pamphlets which will be made available to centres to be arranged by Air Force officers commanding. Subsequently the Reserve will be maintained primarily from personnel completing engagements in the Permanent and Citizens Forces. Conditions of service are as follows:—

Engagement for five years and further re-engagement each of five years.

Applicants must volunteer for service and be accepted for enlistment in the Reserve;

Applicants must possess honourable discharges;

Applicants must be medically fit for service;

Applicants must report annually, in writing, notifying addresses or change of addresses, and other particulars as may be required;

Persons appointed to the Reserve will be appointed to the rank they held previously;

Retirement from the Reserve will be governed by the same retiring ages as are applicable to the Permanent Air Force, viz.: General Duties Branch—Flight Lieutenant at 41 to Air Commodore at 52; Other Warrant Officer at 40 to Air Commodore at 51; Pilot Officer at 38; Airman at 35; and Categories—55 (other than those with exclusive aircrave qualifications for whom the retiring age is 40).

The Citizen Air Force Reserve will consist of personnel possessing qualifications required for service in the various branches of a modern Air Force. It will be constituted initially from trained personnel, including the R.A.A.F. Nursing Service and the W.A.A.F. who were serving in 1939-45 war. The Reserve will be maintained partly from personnel trained in the Active Citizen Air Force, and partly from persons in civil life who possess qualifications required by the Service. Personnel serving in this Reserve will not be obliged to undertake any form of annual training, but will be required to give an undertaking that, in the event of a national emergency, their services will be readily available to the R.A.A.F. However, it is hoped that they will voluntarily undertake the limited form of training initially planned for members of the P.A.F. Reserve. Conditions of service are as follow:—

In the Reserve in their last substantive or highest rank in the R.A.A.F. There is no time qualification in regard to service, and personnel in this Reserve may withdraw on giving due notice;

Personnel will be retired at the equivalent retirement age for the Permanent Force;

Persons desiring to enrol in this Reserve must undertake that they will report for duty when called upon in an emergency; that they will state their general health at time of notification;

Volunteers with previous service will be entered in the Reserve in their last substantive or highest rank in the R.A.A.F. There is no time qualification in regard to service, and personnel in this Reserve may withdraw on giving due notice;

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tion, and subsequent changes which may render them unfit for service; that they will not change their residence, and that they will reaffirm their desire to continue service and the state of their health at the time.

Reservists shall not be required to undergo training outside the Commonwealth or its Territories without their consent. When reservists are called up, they shall be liable to serve for the period for which the Reserve has been called out, or for the period for which they have volunteered, whichever is the longer.

The details of the regulations by which the Reserve will be governed are as follows:

Reservists proposing to leave the Commonwealth temporarily shall notify the Air Board of their intended place of residence, and if they are taking up permanent or protracted residence abroad shall be terminated;

Members on the Reserve shall rank as junior to members of the same rank in the Active Force, and, when called up, the seniority of members of the Reserve shall rank and take command with members of the Active Force as though their seniority bore date from the date of being called up, or, if promoted whilst called up, from the date of such promotion;

Age for retirement shall be as prescribed for members of the Permanent Force but, in time of war, the ages for retirement may be extended for an additional period not exceeding the duration of the war and a period of three months thereafter;

Persons appointed to the Reserve will be appointed in the substantive or higher temporary rank previously held, but persons who have not had previous service will be entered in such rank as may be approved by the Air Board;

A reservist shall be liable to pass such tests of military knowledge and tests for his category and rank as may from time to time be required by the Air Board;

Reservists will not receive any pay, allowance or promotion unless and until they are called up for service or in the case of the Permanent Air Force Reserve unless they are required to undergo a period of continuous training.

The division of members of the Permanent Air Force and Citizen Air Force Reserve of officers will be rationalised into general duties, technical equipment, accountants, special duties, medical and dental offices and officers of the R.A.A.F. Nursing Service and the W.A.A.A.F.

It is intended that the airmen's list will correspond with the various commercial trade groups, and an additional category will be added to provide for the entry of ex-servicemen.

Consideration has also been given to the enrolment of members of the Air Training Corps who have retired from the Corps upon attaining the age of 18. The training of such members in a special category of the Reserve will create a valuable pool of enthusiastic young men.

The Reservists will be kept in touch with latest developments in the R.A.A.F. by means of special training bulletins, service pamphlets, newsletters, lectures, films and, wherever possible, visits to R.A.A.F. stations and units for the purpose of viewing new equipment and flying demonstrations. In each State, the R.A.A.F. will make every effort to foster the interest and enthusiasm of its Reservists.

It is intended that the place include the incorporation of the present Wireless Reserve in the R.A.A.F. Reserve, and that the numbers of radio personnel in the Permanent Air Force Reserve will be at least 230 officers and 1,800 airmen. This compares with the pre-war total of 193 members, 188 of whom received commissions during the war.

It will be the policy of the Service to enlist the aid of the Wireless Institute of Australia to assist in the training and recruiting of the parts of the Reserve, and to propose to organise the main functions of the Reserve on an area basis to effect the complete integration necessary if it is to be of maximum use in war.

Under such an organisation, the Chief Signals Officer of each State Area will be responsible

for the training of recruited incoming instructors in many of the latest radio and radar devices.

The value of reservists can be judged from the fact that the R.A.A.F. Wireless Reserve in 1939 contained 1,100 wireless operators, equipped with circuits without delay and to carry out not a development plan of expansion which would have been considerably delayed without the able and loyal aid of the members of the Reserve.

R.A.A.F. wireless installations, costing £1,250,000, will include a radio teletype communication system using frequency shift and single side band techniques, which, combined with the tape relay system of traffic handling and a new system of very high frequency tone keyed radio links will

provide a modern and efficient communication system on which members will be trained. High powered radio transmitters for broadcasting meteorological information are being installed at Canberra under an international agreement, which provide for weather transmission from Australia, to be linked with a chain of similar transmissions extending from South Africa to Hawaii.

R.A.A.F. aircraft will be fitted with very high frequency communication equipment, which will provide efficient air to ground communication and will also assist them to use the Department of Civil Aviation Radio Ranges. These ranges give a visual indication that aircraft are on course when flying along the range.

The R.A.A.F.'s approach and landing aids will include the latest aids used in Britain and America, and will enable operators to determine the exact position and height of an aircraft above the airfield, and to guide the aircraft to a landing by radio telephone. Another landing aid to be used is the system which computes the equipment required to determine the position of the pilot. Indications received from the ground approach beacon and from inner and outer marker beacons will enable the pilot to almost land "blind." Other aids to be installed include Radar Beacons, High Power Medium Frequency Homing Beacons, Canadian High Frequency Direction Finding Stations. The latter, of course, have already been set up at coastal bases to facilitate the R.A.A.F.'s search and rescue service to which it is committed under the L.C.O.A. agreement.

AMATEUR CALL SIGNS

We have been notified by the P.M.G.'s Department that no Call Sign Book will be published this July, and the following are the amendments, etc., to the 1st June.

Alterations:

VK2ABN—W. North, 81 Mirville St., Concord West, N.S.W.

2ACR—C. Kirkwood, 355 Pennant Hills Rd., Pennant Hills, N.S.W.

2APR—R. J. Reynolds, 12 Cotswold St., Westmead, N.S.W.

2AH—J. Jones, Bonyalla Rd., Edensor Park, Canley Vale, N.S.W.

2AHZ—H. P. Jackson, "Benares," Baroona Ave., Church Point, N.S.W.

2AKW—G. H. Humphrey, 42 Carlingford Rd., Epping, N.S.W.

2BON—A. Andrews, "Barnsdale," corner Thorney Rd. & Cambridge St., Fairfield West, N.S.W.

2DS—W. S. Clark, Kempsey Rd., Port Macquarie, N.S.W.

2FN—F. A. Noble, c/o 62 James St., Murrwillumbah, N.S.W.

2IA—K. F. Handel, 520 Homer St., Earlwood, 2JX—P. H. Adams, "Waigant," Plateau Rd., Avalon Beach, N.S.W.

2LU—R. P. Collett, 100 Scarpe St., Belmore, 2ON—L. D. Donald, Baan Banj St., Double Bay, 2PL—W. L. Pitts, "Kemmis," Hall, A.C.T.

2QI—C. Bowler, S.S. Iron King, c/o 25 Castle St., Randwick.

2QR—P. H. Burstis, "Carrollia," Castle Hill Rd., West, Penrith, N.S.W.

2QW—A. G. Bird, 4 Drummond St., Belmore, 2TD—K. R. Doyle, 7 Great North Rd., Five Dock.

2VM—G. W. Morris, 134 Falcon Street, North Sydney.

2VQ—J. W. Paton, 78 Fairlight St., Manly, 2VT (formerly VK6AV)—E. J. Eastley, "Warial," Young.

2YU (formerly VKENU)—D. Dawson c/o Station 2TM, Tamworth, N.S.W.

VK3ABJ—R. J. Rogers, 59 Andrew St., Windsor, 3AC—C. C. Seddon, 7 Wilson St., Brighton.

3AH—H. Jupp, Glenroy Rd., Glenroy, Vic.

3AJ—R. G. Herold, 12 Elm St., Surry Hills, 3ALW—O. L. Wirsu, 51 McArthur St., Moorebank, Vic.

3BS (formerly VK4LP)—L. N. Page, 589 Whitehorse Rd., Surrey Hills, Vic.

3DC—J. C. Cowell, 23 Lovell St., South Hawthorn, Vic.

3EQ—N. S. Gee, 14 Ryd St., Warrnambool, Vic.

3FQ—A. C. Yeomans, 25 Duke St., Kew, Vic.

3HQ—Mrs. M. L. Williamson, Bryon Avon, Caloundra, Qld.

3OV—A. F. Cunningham, cnr. Queen & Webb Streets, Altona, Vic.

3PH—N. G. Williams, "Orchidair," High St., Seymour, Vic.

3QE—E. E. Draper, cnr. Draper & Blackshaw Sts., Ormond, Vic.

3QQ—J. R. Lancaster, 250 Nepean Highway, Parkdale, Vic.

3RH—R. Blackham, 31 Fellow St., Mitcham.

VK4AN—B. Winkler, Woodstock Ave., Taringa.

4DC (formerly VK4QA)—R. Khan, 22 Sheridan St., Calms, Qld.

4HH (formerly VK2AJH)—J. E. Hills, c/o 40Y Gympie, Qld.

4NL—N. G. Dangerfield, Hobart St., Ayr, Qld.

4SE—T. S. Shoring, 178 Oxlade Drive, New Farm, Qld.

4UX—P. Singletary, Tyrell St., Stanthorpe, V.KLBD (formerly VK4BS)—W. R. Sands, 16 Beckman St., Plympton, S.A.

5PK (formerly VK2AGK)—P. T. Hainsworth, 83 Leichardt St., Five Dock, S.A.

5VC—J. B. Moran, 10 Bonney St., Alberton, 5ZN—S. McNamara, 4 West Parkway, Beadle Park, S.A.

VK6WD—D. W. Scott, 225 Wellington St., Northam.

New Issue:

VK2ER—J. Chessel, 17 Elizabeth St., Dulwich Hill, N.S.W.

2FU—H. J. Trick, 20 Hill St., Balgowlah.

2IX—R. F. Mustett, 112 Forsyth St., Wagga Wagga, N.S.W.

2KT—J. G. Gandy, 71 Albion St., Waverley.

2LJ—H. W. Waugh, 37 Bent St., North Sydney.

2MX—J. W. Jenkinson, "Wallace," Mathoura.

2SR—G. E. Switzer, 177 Bacon St., Grafton.

2TZ—C. D'Evlynnes, "Clayden," Grana Rd., Mona Vale, N.S.W.

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cial affairs. This Committee has done much helpful work.

In the Federal field, many of the changes in regulations recommended at the 1947 Convention have been introduced by the Postmaster-General's Department as the results of the efforts of our Federal Executive.

Whilst it is regretted that we are little further ahead in settling the Divisions into a single body—nation-wide W.I.A., governed by a Federal Council working to an all embracing constitution, your Council has left no stone unturned in striving to attain this end. This matter will again be pressed at the 1948 Federal Convention.

In spite of adverse conditions, the members of the Association could hardly be satisfied with the decisions reached at the International Telecommunications Union meeting held at Atlantic City. Few people realise the magnitude of the demands now made for frequencies by commercial and defence interests throughout the world. There is just one

point however, and that is that if we are to retain our present allocations, they must be put to good use—furthermore, we must have unity. As the W.I.A. is Australia's national body and thus the mouthpiece of Amateur in the Commonwealth, we cannot wait until we present 100 per cent. of the licensed Amateurs.

To put our own house in order, it has become quite obvious that the Division is in need of Club Rooms and a paid Secretary and that means finance. So far, we have been unable to solve this problem but hope all members think it is best kept foremost in their mind for the future.

Membership.—As at the 29th February, 1948, the membership stood at 495, comprised of 347 city and 148 country members. During the last few months of the year, a membership drive was mounted—this circuitously meeting together with an application form is being forwarded to all new licensees, a circular couched in somewhat similar terms is sent to all non-members with their QSL cards, which may be obtained by giving through the medium of the regular VK8WI Bureau. Results so far show that the drive is having the desired effect and it is up to each and every member to do his or her part.

During the year, Mr. W. M. Moore (2HZ) and Mr. W. Zoch (2ACP) were elected to Canterbury Life Membership in recognition of their valuable services to the Institute; Mr. Zoch being a foundation member, Mr. Moore in acting as the principal operator of VK8WI during the year has been of great assistance.

Disposals.—A big percentage of both city and country members have participated in the disposal of a considerable quantity of equipment from the Liquidation Commission. We desire to place on record our appreciation of the Queensland and Victorian Divisions' co-operation in making available to our members equipment from their respective States. As disclosed in the accounts, all equipment has been passed to members at cost plus a small margin to cover freight charges. The brunt of the work in handling this equipment has been ably borne by 2YF.

A.O.C.P. Classes.—Two A.O.C.P. Classes have been conducted by the Division during the past twelve months—the first under the management of 2ABS and the course now in progress under 2BF. From the experience gained in earlier classes, it was decided to extend the duration of the course from three to four months.

V.H.F. Section.—This section under the able leadership of 2NP with 2PW as Secretary has made great progress. Meetings are now held on the second Friday of each month in the small hall at Science House and the attendance has been as high as 50. Some recent meetings have been held at V.H.F. enthusiasts while the work of the section as a whole must be regarded as highly satisfactory.

Annual Dinner.—The Annual Dinner was held at the "Ding Dong" on 7th January and attended by some 50 members and visitors. Distinguished guests included the Superintendent of Wireless Mr. T. Armstrong and the President of the Institution of Radio Engineers, Mr. R. Alsop. It is to be regretted that the fare was not more attractive as members who had signified their intention to attend did not do so, the Division suffered a considerable financial loss as disclosed by the accounts.

Amendments to Articles of Association.—During the year, our Articles of Association were amended to permit the membership to be increased from 500 to 1,000 and to provide for our financial year ends on the last day of February annually. This date is now uniform to all Divisions.

QSL Bureau.—The number of QSL cards handled exceeded 3,000 per month and the Bureau ended the year just square financially. During the year, lack of envelopes and very erratic overseas mail made the running of the Bureau very difficult and the ideal of a Central Bureau for the benefit of members had to be curtailed. The Council thinks those who came forward with envelopes when lack of them made the work extremely arduous—2DI, 2ID, 2OE, 2IE, 2ZB, 2ZC, 2ZD, 2FA and 2PA whose efforts enabled members to receive their Monthly Bulletins at a crucial period! The QSL Officer would like to record his appreciation of the help he received from 2IE whose assistance was invaluable in getting the Bureau off the ground accumulating whenever there was a sudden rush of mail. Our sincere thanks also go to Mrs. Corbin for her continued assistance in not only the QSL Bureau but also the despatch of the monthly bulletins.

Council.—The vacancy on the Council caused by resignation of 2TR on 10th February was not filled due to the proximity of the Annual General Meeting. 2TR regretfully tendered his resignation for business reasons. The Treasurer, 2DR, was also

compelled to resign for similar reasons, however his responsibilities were assumed by 2AND who has carried on in a most efficient manner.

The following table shows the attendance of Councillors at meetings, the total number held being 18: Messrs. P. H. Adams 17, T. R. Anthony 7, R. B. Bannister 16, W. J. Bannister 16, D. Hutchinson 14, M. H. Meyers 16, J. Mayle 17.

In conclusion, we would like to reiterate the well known words of our 1947 President, Mr. Bill Moore, in his report: "It is an accepted fact in physics that you can't give even as much out of a man as you put in". I believe it is generally believed that there is extra effort called for, but members has not been forthcoming to the extent necessary. We thank you however, for your support and wish the new Council, whoever they may be, every success.

For the Council,
M. H. MEYERS, President.

TREASURER'S REPORT

The year 1947-8 has been a record year for the N.S.W. Division as an examination of the accounts and financial statements will show. There are however, a few points which I would like to bring to your notice.

The amount of £68/- shown as outstanding to the Federal Executive seems rather high, but as the Divisions' accounts are not turned out owing to pressure of work and the balancing of the books, it is estimated that this figure will be reduced by £61 13/- leaving a balance of £24 15/- against which a reserve of £15 has been provided.

The Disposals Account shows a balance of £40 2/9. There are, however, charges which have to be met which have not as yet come to hand. These include freight and shipping and insurance on certain equipment. The amount of £162 8/6 is money paid in by members orders which have not as yet been fulfilled.

A.O.C.P. Class No. 5 is still in progress and part of the amount of £100 0/6 held by the Class Manager will be spent in defraying Class expenses to meet the cost of the course. The balance of the Class profit to below the £24 13/- shown, but the Classes must be considered well worth while.

The £25 sent to the Federal Executive was this Division's share in the cost of printing certificates which included the Annual Contest, W.A.S., Member and D.G.C. awards. It has been decided to write this amount off over a three year period during which the certificates will be used.

The rent paid in advance to Science House includes the cost of heating and for the V.H.F. Section as well as the main hall for our meetings and covers the period March to December.

With the adoption of a uniform fiscal year and all subscriptions falling due on the last day of February, my work will be considerably simplified and I will be introducing a more comprehensive system of account than is at the present. Also the work of sending out statements and recording membership data will be much easier. I should like to take this opportunity of urging all members to settle their accounts promptly and thus save me much unnecessary work in sending out extra statements.

B. H. ANDERSON,
Honorary Treasurer.

NORTH COAST AND TABLELANDS

2GJ experimenting with 3.5 Mc. antenna, fortunately had a fairly plenty of space in skyways, but troubled with a.c. noise on 3.5 Mc. during the day. Solid signal on 3.5 Mc. 2AO has had bad line regulation, but uses auto transformer to keep the filaments under control. 2XQ has been on vacation and visited 2GJ, 2OE and 2ABN, gang next stop Brisbane, 300 miles away, was held with 2ABN and 2PA. 2APP worked with line hash on 7 Mc. and was heard occasionally on 7 Mc. 2LJ on holidays from Sydney (University vacation) and was active on 7 Mc.

With only 5 watts 2ATH is going places on 7 Mc., using the QRP rig as a fire-side companion on these winter nights. QRO rig on 14 Mc. Pressure of work keeping 2WO on air; some gremlins in receiver also 2AO another one holidays in Lismore, 300 miles away, was held with 2ABN and can be distinguished over any outfit. 2ARJ on 7 Mc. but has some rig trouble, hope they are only little ones! 2SH worried with 3.5 Mc. overtones from 7 Mc. transmissions. 2PA finds 3.5 Mc. band interesting, using long wire. Has h.c.i. plus and phone operating limited in early hours.

NEWCASTLE ZONE

2XQ ardent c.w. man using 6 to 10 watts on 7 and 28 Mc. phone, a nice signal. 2AMM has been heard on 28 Mc. phone, welcome Bill. 2AND

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also very active on 28 Mc. phone. 2AGD taking advantage of dead nights on 29 Mc. by re-stranging shack and putting finishing touches on cover. 2AHA awaiting return of DX C.C., congrats on advance. 2BZ not heard on the low bands, still giving the v.h.f.s. the works. 2CS doing hard work on 10 Mc. and 20 Mc. 2DZ, 10 gauge steel, how are the blisters? 2CI did a good job. 2DE getting our extremely well judging from reports. 2PQ won an 807 for a novelty code contest at Newcastle Club recently.

COALFIELDS AND LAKE ZONE

2ARZ been holding day and have plans for complete rebuild even including antenna. 2OC active on 144 and getting through to Newcastle and Coonamble, keeps an eye on 50 Mc. for anything unusual, not noticing hearing it here during last month. 2AMU in action on 28 Mc. 2TE getting judgements from the DX calling him. 2RU consistent on 50 Mc. and maybe 144 Mc. soon. No news of the Woy Woy gang. 2TY heard on 28 Mc. what's the story? 2XKZ making progress with the 2YD antennas to be installed.

2RF active on 28 Mc. in the week-ends and doing a beat on 50 Mc. look like loosing Bob when house difficulties come. 2ADT still doing things, 2BZ active on 50 Mc. before the demolition worked Newcastle, Wyndham and Broken Hill. 2M only heard occasionally on 14 and 28 Mc. 2MK doing a little on 28 Mc. and hopes to have new rig on shortly. 2AF at moment erecting 70 foot steel tower (ex 2AF) when finished will have motor at top and several phones. 2YL taking things quietly, playing tennis, spams on 28 Mc. and 25 Mc. Please send news to 2YL the first week in each month.

WESTERN ZONE

Recent arrival in the Blue Mountains is 2EF at Warriewood, built with commercial parts at the moment. 2LZ building super rig using two finals (813s), 807s in the exciter. 2FI sometimes leaves the v.h.f.s. for a QSO on 7 Mc. 2LZ confirming activity to 144 and 50 Mc. 2FH at St. Mary's has a 14 Mc. steel tower, four elements on 14 Mc. will go on top of tower. 2FH has a 90 m.p.h. 2HZ building c.r.o. and super f.s. meter, also known as "The Voice." 2ACU settled down in new house at Coonamble, working DX 144 Mc. 2AM has new rotary working on 14 and 28 Mc. 2ON and 2VH have moved after 2SI still working 14 Mc. DX; also on a system of remote control. 2ACT QRT trapping rabbits. 2TG main interest still DX. 2ALX still has the

nicest phone on all bands. 2JW is re-building for 6000 Mc. 2NS has gone setup, a couple of Vees on 14 Mc. and one dipole on 28 Mc. for the corner on and off on 7 Mc. phone and back the corner. 2IE been on holidays in VK4, still mad with the DX. 2OT trying to work some of the easy 28 Mc. I mentioned, but finds it far from easy owing to poor QRM. 2QH the ideal QTH no noise on any band and little traffic to cause ignition noise. 2WH not heard much; concentrating on fat lambs? 2BT bowting them on 14 Mc. phone when does the phone DX C.C. arrive Bill? 2LH worried after a look at the back of 2LJ's new rig.

SOUTH COAST AND TABLELANDS

The new Wollongong Club is making arrangements to affiliate with the W.I.A.: 2WV and 2UK handling the problems. 2UK has altered modulation system and power transformer doing good job with more transmitter. 2WV, with 0.010 mfd. plate phone to Type A Mark 2, largest stage to be added, v.t.o. coming too and two 50 foot bush poles to go up. From Canberra, 2GU active on 50 Mc. and regular contacts with 2JW, 2DQ, 2LH who have worked South America on 7 Mc. C.W. visited Yass and saw 2ALS and 2DO.

2ALS unlucky lately, off duty due to sickness, 2YF, of Goulburn, used an 804 and 30 watts sup-

T.A.C. MEETING NIGHTS.

It is noted that the Technical Advisory Committee of the Victorian Division of the W.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:-

- 1st Tuesday: Practical Work.
- 2nd Wednesday: V.H.F. Group.
- 3rd Tuesday: T.A.C. General Meeting.
- 4th Tuesday: Practical Work.
- 5th Wednesday: Receiver Group.
- 5th Thursday: Practical Work.

VKS3WI will announce the programme for these individual meetings in forthcoming broadcasts.

resistor modulation, new mod. outfit on way 807s in AB2, 2AZ some QTH's may be heard soon on 14 Mc. c.w. while No. 11 on 7 Mc. works V.K. and ZL. 2MF working DX 144 Mc. also will be building for v.h.f.s. 2LA still busy on house renovating. Would stations in the Zone please stand by to contact 2DO on 7100 Kc. after 2WI broadcast and supply the latest news.

SOUTHERN ZONE

2ANG had horrific trouble in buffer stage and may re-build, 2AW still in use in spite of winter. 2APW and 2VR both waiting on ART receivers, sorry to hear of serious illness of father, we hope for a speedy recovery. 2OJ listening around 50 Mc. but so far no signals heard. 2NL still working DX 144 Mc. also 20 Mc. and 28 Mc. and would be pleased to receive any news. 2ST using 68% and 807s and 50 watts; is trying crystal mike instead of dynamic headset, result must improve quality. 2MF getting downward modulation interested in the v.h.f.s. 2AB for 50 Mc. contacts. 2AB putting up 14 and 28 Mc. beams, changing the 100 watt transmitter into a band-switching unit, in the interim using phone on Type 3 Mark 2.

VICTORIA

At the June general meeting two films were screened, one entitled "Radio Antenna Fundamentals" and the other "The Creation and Behaviour of Radio Waves".

The first film, illustrated by means of animated drawings, the reflection of travelling waves on antennae and transmission lines, and the production of standing waves followed. Methods of feeding antennae, different types of transmission lines was illustrated and the effect of series resistances or capacitance on the electrical length of an antenna shown. Various types of aircraft antennae were also shown.

In the second film the propagation of radio waves was illustrated diagrammatically. The production of electromagnetic and electrostatic fields around the electric circuit led on to the production of electromagnetic radiation from an antenna. The film illustrated the propagation of ground waves and the reflection of waves from the ionospheric layers and showed how fading occurs.

These films, on first principles of antennae and wave propagation serve as an introduction to the subject of the talk to be given at the July general meeting by Dr. A. Green, who will discuss the application of Ionospheric Predictions to Amateur Radio Communication.

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T.A.C. ACTIVITIES

Receiver Group—The May meeting of the receiver group lapsed owing to the inability of the group leader (Mr. George Neilson) to attend. At the June meeting the ARS receiver currently available from disposals will be featured, and its performance, advantages and possible modifications discussed.

V.H.F. Group—At the June meeting results of the 144 Mc. field day were discussed. Mr. Don Hope described the construction of a non-reactive resistor for use in power measurement at v.h.f. **A.C. Executive**—Notes: The erection of a mast antenna for VKSWI should be completed shortly. This has been delayed through the difficulty involved in raising the far end, but a steeplejack has now carried out the necessary "high altitude work" and the remaining difficulties will be speedily overcome.

The Sunday broadcasts from VKSWI are now beginning transmitted on 3.5 Mc. and 7 Mc. simultaneously and reports on the 3.5 Mc. transmission, especially from country members, will be greatly appreciated.

EASTERN ZONE

The Eastern Zone hook-up is becoming larger monthly, although there are still many stations that have joined in there is still a number yet to make an appearance, so chaps don't forget every Sunday at 2000 hours—on 3650 Ke.

SANC made his first appearance with very nice



The gathering at the Third Eastern Zone Convention at Tinambra

photos. SQZ and SSS deserve a word of praise for the good job they have done in distribution of the Zone digest, and SBR, SVE, SWS and SCL are to be congratulated on their fine achievements. When on the last 144 Mc. Field Day they had some very interesting contacts and by reports there seems to be big possibilities in the band. SWB is doing a great job on the local fm frequency; he says there is not much to report this weather; Bill is always on the spot on Sundays. 3PR has been carrying out low power 50 Mc. tests with 3DP who reports S9 signals. Ron was also successful in his 144 Mc. test on the 14th.

Another newcomer to the hook-up is 3TH who puts in a very fine signal and takes a keen interest in the zone's activities. Gordon is also interested in v.h.f. 3AMR also made an appearance with a SVE c.w. signal using Type 3. SAEH has a new rig on the way in the meantime joining in the hook-up with the old one. SLEW is also masking alterations to his rig and is now putting out a f.b. signal. 3BL is busy building a modulator and oscillator on the same soons. SAKL puts out a very good signal at 7 Mc., but may be busy on Sunday nights. SAHK has the DX bug, don't you ever hit the hay before midnight? SAJL has not been in the hook-up for a while, what is he holding up Jack?

NORTH WESTERN ZONE

The N.W. Zone Convention has been definitely fixed for Saturday July 24th and Sunday 25th, 1948, at the farm homestead of SBE, six miles out of Quambatook. Members of four Zones have already indicated their intention to come and all visitors will be welcome.

This Zone has shown its appreciation of the Disposals Committee's good work, very militant purchases, being the greatest per member of any Zone. The 3.5 Mc. transmission from SWI is very well received up here, with less fading and less interference.

3ACE is doing very well on 3.5, 7, and 14 Mc. with a Type 3 Mark 2. On 14 Mc. c.w. he has worked all V.E. call areas, J. C. G. ON, VE, etc. also Ws and YEs on 7 Mc. Is putting up a better antenna. Clegg is spending his time again, so beware. 3TI is a real one-time active again. Has a half wave 3.5 Mc. cage (1) 60 feet high, zep-pi, and is getting out on 3.5 and 7 Mc. c.w. and phone. His spare time is limited with keeping the rigs up in the hot position.

3AT, of SLE, has been down visiting the Birchup gang. 3HZ has got a pile of disposals gear including Command receivers and transmitters which he hopes to convert to portable use so that he can have his contacts when out on the road so much. His afternoons have been broken down beyond repair so he is inactive at present. All are anxiously awaiting news from 3TL of the new rotary beam. 3CE has the complete AT5-ARS/ACU and genomotor power supply with cables, insulation and all. Xander AN has the best of words. 3OA is quite inactive at the radio, but is concerned. Ian hasn't even looked into his SOR522 yet, but intends to tackle 144 Mc. soon.

3BM has cleaned up the sowing operation, and hopes to indulge in technical activity in the slack time. 3VAD has the 60 ft. to go. It's a grand life farmer-cone-ham. Wally Loveland has his 4-band f.b. Bendix transmitter and proposes to use it to drive external finals. Is using a 550/12 volt genemotor to obtain the supply voltages. ARS is

assists in keeping the local b.c. rig on the air. SFC has left Mildura and is active on 7 Mc. at Ouyen, where he is postmaster. The d.m.s. mainly give him a few contacts, notably on 7 Mc. and 3.5 meters would make this job hot up on 28 Mc. Max has charge of the local b.c.'s technical staff. 3BV and 3AHG are students at the University Branch. Ian has been active with a Type A Mark 3. He has just come from first-term class with a lot of gear with which he is going to build a 50 Mc. rig. 3PK is heard occasionally on 7 Mc. c.w., but his photographic work keeps him from the key.

3GZ has increased power from a Type A Mark 3 and is running 25 watts, also has modulator under test. When not in the shack he is attending to the caves and ledges pianists instruments. 3NG, a Red Cliffs horticulturist, is awaiting connection to the a.c. main. When the juice is available he is likely to be a zone master to assist in falling tree removals etc. Bob says some of these are about 70 feet high. Ex-SUG, who had given the game away post-war, has been bitten by the 50 Mc. bug, and is now gathering components for a rig to go on that band.

QUEENSLAND

It would have pleased the writer immensely to have been able to report some spectacular achievements on the VK4 Field Day held on the 13th June, but the weather ran true to form and obligingly turned out a cold damp day. 4VJ, 4TR and particularly from Wattle Hill, 4VZ, were using battery power; 4TR was on a launch down the Bay and seemed to be doing rather well. As a result of skip conditions, the winners will probably comprise those who could operate on 7 Mc. as well as 14 and 28 Mc., as conditions were not too plentiful on the higher frequency bands.

At the general meeting held on Friday, 23rd May, an election took place for the position of Federal Councillor. 4ZN's term having expired, H. McGregor (4ZU) was elected after the ballot papers were secreted. Bill is a regular 4VJ, 4TR and particularly from Wattle Hill, 4VZ, 4VJ, 4TR, 4VZ, 4EN, 29 votes. Country Representative, 4EN, airing the views of some country members, has since suggested that in future ballot papers should be signed by the Secretary, and if possible printed, instead of rousted.

Concerning some time in discussing this matter, and eventually reached a compromise that the ballot papers would in future be rousted, and would carry the initials of the Secretary. Most of the Council members are in the dark as to what all this is designed to achieve. The Secretary is of the opinion that this will save someone from having something to do, and wishes to make it known that for a small fee he will supply a stamped addressed envelope, lick the flap and drop it in the mail box. Just in passing, of a total of 1000 ballot papers to the Secretary, less than 20 were returned, some of them from the extreme ends of the State, which disposes of the "no time" excuse. While we're having a grouch, the membership of the Queensland Division has reached the 2000 mark. Of these, 1200 country and 800 city members are under 21 years of age.

Congratulations this month go to VK4HH, who becomes the first VK4 to crack the D.C. Century Club. Nice work Tibby. In a demonstration of v.h.f. working and associated gear at the June general meeting at Elizabeth Street Rooms, to be opened by the Elizabeth Street Rotarians, a member of the Food for Britain Appeal will also be staged and should make the evening quite interesting.

The library service looks as though it is not quite finished. As a result of the bright suggestion of 4WJ, who is now proposed to secure a deposit of 5/- per month for the library service.

If a book should go astray in the post the sender (i.e. the fellow returning the book to the library) gets a second chance. If a second book goes astray he profits his 5/-.

The number of books in the possession of the library is a fraction of the total number which never return.

The pleasing feature of the Student Section is the steady attendance at Morse Classes. About 20 members turn up regularly and apply themselves diligently to the task of code learning. A word of appreciation to associate member McGregor for

his assistance in instruction. Speaking on behalf of the associate members at the May meeting, 4VJ said that he believed there were quite a few associate members who would welcome the opportunity to visit the shack of their associates and see for themselves the way things were done as regards the building and operation of transmitters, etc. The idea, of course has much to recommend it, and the important point for prospective visitors is to remember to notify their victim of the intended visit, as otherwise it may be impossible for them to succeed in penetrating the shack. Hay wire merchants please note!

Learning of the successful W.A. practice of staging short lectures at general meetings, the Council decided to stage two at the May meeting. Mr. K.B. (4ZU) outlined his experience with the 4KX deal with Push-Push Doublers, as per QST February, 1938, a circuit by which 4HR skipped up to 238 Mc. without difficulty. 4ZU outlined his experience with R.F. Power Supplies for C.R.O.'s. Both talk was well received by members, and the idea looks worthy of further trial. It is believed that the worthy President (4AW) may, if sufficiently provoked, be induced to give a short talk on Lecher Lines. Any more offers?

If it is proposed to change the times of 4WI transmission to fit in with the schedule drawn up by Federal Executive, the new time of the broadcast being 0930 hours, Sunday morning, to commence as from 1st July. The first station on each Sunday is to be VK3WIA, the Federal Station at the old 4W time of 0900 hours.

In winter months it is difficult in the past to compile material for the newsletters, mainly due to pre-occupation on the higher frequencies. Having heard via the grape-vine that the low frequency men felt that they deserved better representation, one course only seems open - let more complete news items take care of them. For a fellow who writes mainly on the frequencies below 28 Mc. the job should be a walk-over. At the June general meeting 4ZU will resign as Sub-Editor of "Amateur Radio" and nominations will be called for a new editor. Anyway you've had my notes in "A.R." since 1938, a change should be welcome. 73 QSLs.

SOUTH AUSTRALIA

The monthly general meeting was held on 8th June to a very representative gathering. The speaker for the evening was John Allan (3AL) and his subject was "Practical Electronics". Among the many visitors present were J. Harris, A. R. Harris, P. C. Hutchins (6PH), from Willaston; Bob Parashas (ex-5PK; ex-4PS), and A. L. Benjaminson (2W1ZA). The lecturer covered himself with glory, and once again proved the fact that providing he knows his subject he does not try to blind his listeners with science, he cannot go wrong with any subject. I admit, in company with a good many more who attended, that we came along with some trepidation, prepared for the worst. How ill-founded were our fears, is disclosed when we say that John did not start lecturing the audience of his hand for more than seventy-five minutes by what was admitted by all to be one of the most interesting lectures heard for some time. Fortunately for me, and you, most of the lecture took place on the blackboard and the rest on the tape-diagram overhead. I cannot give a written report. However you can take it from me that we learnt a lot about parasitic E, ionospheric refraction, various layers etc., and many other matters which up till then had been a deep and deadly secret. When the meeting ended the last item on the agenda was an opportunity was taken to dispense by tender the radio gear of the late Mayo Richards (5VR). With 5BY as chief tender receiver, things went along at a record bat, and as condensers, etc., were offered for tender, the insults flew fast and furious. The tenders were invited and received the opinions on his signal in the meantime that he has had, in the many years he has been on the air. Luke gave as good as he received and the meeting was almost equalised at times. Dougal accepted a tender for an object on the end of the table, and when the gear was shifted back into its case it was found that it was SWL than had been sold. That will teach you Ross, not to loiter near the apparatus for tender. 5P's sat near the Treasurer and watched the money roll in, he did not tender for anything, but he managed to squint quite a lot. I understand "Dad" was watching him. Anyway a good time was had by all, and that's what a W.I.A. meeting should aim for; and I right?

Hearld 5GD, 5GL and 5MD up on 14 Mc. the other night, what's wrong boys? No more fairy biscuits, biscuits, tea, coffee, etc. I may have caught a good signal from 4MF on 14 Mc. the other afternoon. I recognised the voice Bill, although you had me tricked for a while. You come in stronger to me from VK4 than from your usual QTH; wouldn't it. A real old-timer in 5DX is putting an extra good signal to these days. I hope he does. Don't expect to hear you again. A little splatter on the signal, but who am I to point the finger.



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Successful candidates in the recent A.O.C.P. examination held in April are J. Young, T. J. Davies, D. A. Crowley, N. L. McGowan, K. S. Edwards and J. C. Williams. We extend our congratulations and sincerely hope that these Hammen are members or prospective members.

I am in receipt of a letter of congratulation from GJE thanking me for my publicity efforts in connection with the Glenelg Radio Club. I modestly thank him and hope to continue his efforts. I have heard no more of the Club, so what about it Ted? Isn't it strange, no matter what I do for the W.L.A., the Divisional Secretary can't get around to sending me any sort of a letter, and believe me I have tried hard enough.

The other night I was working in the middle of the c.w. end of 14 Mc telling some old story about the mass of technical gear that adorned his shack. It made me feel so inferior as I gazed at the mediocre collection of junk facing me in my shack. I closed up however when it occurred to me that just because I'm dumb for both phone and c.w. end of the band.

5WM was successful in a recent broadcast operator's examination. Nice, nice work Wick. Me oh my, I can get this end of c.w. I can remember when I used to kick him in the head and dumb because he was late in getting my lunch.

I take a dim view of those two well known Hams who were heard to say on the high end of 14 Mc recently, "Be careful George, the message is on the air and is sure to be listening to all we say." I'll say I did, and will I say it? Not much I won't!

5GD is just recovering from an attack of the vapours or something, because a visitor to his shack later told someone else that George's phone had definite signs of downward motion. Do you think George went to much of a star-dance when it was reported back to him. Now he knows what I felt like when the same person put that one over on me. You bent.

Heard 5AC working on 7 and 14 Mc with c.w. using a Type 2 Mark 2. Gathered that he was using a 1000 watt transmitter and his 5DR is in three steps of re-building at the time of writing, push pull 807s I believe in the final. 5PJ is reported as having gone to Angaston on 29th May. Was heard in Adelaide with a good signal from a portable FSG loaned to him by 5CD. My latest information about 5RH is to the effect that

he is still on the sick list at home, hope that you are OK now Geoff.

5XO and 5ZR seem to have the secret of snatching the plug from the high end of 14 Mc. Even when the conditions are real poor these two experts scoop up anything which goes up. What's the secret of success fellows? 5UO is to transfer to VK3 for six months, he will be on the air from SDR occasionally. Hope we can contact sometimes Cliff.

SUX has obligingly with a photograph of the gathering at Crystal Brook reported in last month's notes. A handsome looking gang if I may say so. Thanks Les, 5WA suggests that the QSL because it is not often that he has even been on the air when he received a QSL card from JU2USA. They do not come that easy to me.

The phonetic alphabet is undoubtedly a great thing for communicating by means of phone signals, and I am sure that with his knowledge of it as to the right phonetics to use. The many and varied types heard on the air are more often humorous than not, in fact Ross Kelly (SLW) always gave me a good laugh with his I--reindeer. One evening I heard a fellow named Snakes. Now that is funny as well as clever, but when a VKA Ham is heard to give his name as P--patrid H--horrible E--illiterate L--lousy, then he is neither being funny nor humorous, but only bringing the general public of us into disrepute. I've forgotten gang, lots of people hear as on the air who are not as tolerant as our Advisory Committee.

5LA is a newcomer to the air, but is making his presence felt already on 14 Mc. Has run up some nice DX recently and is now low power too. He wants to join the W.L.A. If my persuasion is successful, Yes, he works on the same shift as I do. Six of us all told, maybe I should have said all six of us were on the pay sheet and left it at that. Well, I'm giving, don't forget that little part of regulation 13 which gives you a call sign every five minutes, one or two of the boys have been blistered for that lately.

Regret to announce that one of my best spics in 5LG stepped on a piece of his beam wire there was a short circuit made by the sharp point of his pilot landing, but has developed a complex against beams of any description. Understand that the descriptive flow of sweet words that issued from him would have put a professor of languages (no not you 5LR, sit down) to shame. 5BQ was looking for my blood at the last general meeting because

of a misprint in last May's magazine. I hasten to correct it, and say that it was meant for 5FQ, and am prepared to take my bath that Bill has never been to the beach since 1942.

Joe Meallier did a wonderful efficient job of "putting me in" with the office staff at my place of toll recently. When I arrived to take over my shift, the sweet young thing on the switchboard said "Hello, this is a radio station, not for you from someone in the U.S.A." I thanked her in my most wobbly manner and was amazed to have her say "Mr. Parsons, do your friend call you Panzy?" I shook this insulation off as best I could, but I notice that as I walk around I notice these days the female staff of the telephone has developed a strong tendency to linger in my presence in the lift, so don't suppose I should worry. Thank you Joe, and Mr. X whom I suspect was really behind it.

Sorry to hear that Joe Kilgarriff is on the sick list, but hope by now that he is on the road to recovery. 5FJ has consented to act as stand-in for the training needed. John Parsons and the thanks of the VKS Disposals Committee are due to the VKS Disposals Committee for the opportunity of participating in the recent handbook.

My spouse tells me that there has arisen a new method of DX hunting. You go to a fellow Ham with a good beam, have him work the DX and then call you into the QSO. Easy isn't it? Believe 5JK is a sponsor to this new method. Say Jim, where they call you in, what about calling me in too, I have no sense of shame.

When you are driving in a taxi sometime and you say to the driver "what does the meter say Bud," don't be surprised if he should say "well, QRM is had on 14 Mc. tonight." If this happens it will probably be 5BQ that is causing it.

My man to what details will some Hams climb in an endeavour to secure some new equipment. 5XU gathered up the new Philosope at the monthly meeting and carried it away with some junc he had bought that night. Believe 5AW nearly had hysterics when he saw it. Gosh, I wonder if the Philosope up his jumper. Play the game you cad!

The proposed field day, possibly to be held at Clare around September suggested by the radio gang through their representative 5HJ, was well received at the general meeting, and more should be heard of it.

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WESTERN AUSTRALIA

The June meeting was held on the 14th. There were 54 present, which is a good attendance considering the wet weather. A general discussion followed on the 6MO-Ailler from Watheroo. We had also hoped to meet G2RSM Mobile Marine, but his ship did not berth on schedule.

New members admitted were GLEL L. Blackman, GM4X, G4CK, G4KJ, G4HWH, G4W. Willis, and D. J. Hawkestone, L. H. Roeger, D. Amnerster with their call signs on the way. A hearty welcome is extended to these new members and we hope to contact the country chaps as soon as they get going.

The possibility of obtaining some more disposal equipment from a source known to 6MU seems very remote according to latest correspondence. Nevertheless there is some on the way from VK4 and when it arrives the boys will have some crystals for use.

A telegram from Federal Executive re R.A.A.F. was submitted to debate and a query was returned to Federal Executive for clarification.

Some anxiety was expressed by 6RI as to the despatch of QSL cards to him from VK5. Apparently he has been going astray and 6RI is going to contact 3RJ about the matter.

6WH made a request that the 7 Mc. channel be kept clear for the GW1 broadcasts on 2 p.m. Saturdays and 10 a.m. Sundays. He heard a few of them.

After the discussion on general business, the last names of City members were taken to be in the ballot for the disposal equipment from VK4. Then followed the regular feature of a chin-wag and ragsheet.

As the QRM died down 6JS presented to the W.I.A. WA Division a BC132 receiver (modified for a.c. operation) for use on Station VK6WI, on behalf of the local firm of Atkins (W.A.) Ltd. 6WI accepted the gift and thanked the W.I.A. Division.

It was moved that an official letter of appreciation be forwarded to Atkins, thanking them for this very useful piece of equipment. 6MY followed up with a short chat on the features of this receiver. A number of test signals were sent over by 6RI. Roger showed us on his c.r.o. input and output waveforms of an audio signal through an amplifier. Distortion due to over-driving was clearly seen. The signal from 6AG's b.t.o. (audio) was analysed. We liked the sound of the mouth range and followed up with 6WY's only consolation that it sounded good anyway! A most enjoyable evening was closed at 10.30 p.m.

We believe 6GR is going again after a long silence. On the Perth hook-up 6KE is paired with the results from his new two element beam on 144 Mc. Keith wonders why he didn't put it up ages ago. ZS6GR contacted VK6KRW the other evening and are hoping to hear him again now that the rig is up. 6RQ's new rig is nearing completion and he will soon be breaking through the QRM on 7, 14 and 28 Mc. We'll be pleased to hear you Bert again.

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the results from his new two element beam on 144 Mc. Keith wonders why he didn't put it up ages ago. ZS6GR contacted VK6KRW the other evening and are hoping to hear him again now that the rig is up. 6RQ's new rig is nearing completion and he will soon be

breaking through the QRM on 7, 14 and 28 Mc.

6GM has not been so active these last few months but has plenty of time still for W.I.A. activities. 6OR is having a spot of receiver trouble.

As soon as he clears out this bug, the rig will be ready to go. 6RG is another chap we haven't heard lately and his shack must be cold now with this heat. What a difference! 6RQ has had quite a time. Harvey on the air. 6B has a rig on 7 and 50 Mc. and works the Perth boys regularly on both bands.

Haven't heard 6RK lately but am sure that he is alive and well. And where ever his AT5 will take him. 6RL is talking of a new rig. Ralph expects to be again any day now. 6HS has his receiver in many pieces and is in the throes of a most modern design. It will be ready for the next time. 6XZ 6TR is building up a new receiver so we haven't heard him on lately, but we are looking forward to a "99 report on the meter!"

6WM is a real c.w. merchant and has been working some time on 7 Mc. and 1 Mc. How many countries now! Bill? Heard 6CF putting out a b.t.o. signal on 28 Mc. phone and c.w. a few days ago. Keep it going OM and how about a QSO one of these times. 6PJ is building up a 5-inch c.r.o. Peter and wife are working hard on the evenings and nights and is like most others) looking forward to the summer DX again. Haven't heard 6RK in his usual place on 28 Mc. lately. What's brewing up the Bob? Is it a new antenna?

6GB is a real c.w. merchant who occasionally comes up on 7 Mc. when cross-band QSOs with the country lads are going. What's your best 50 Mc. DX JACK? 6DJ still has the same old rig running. Heard him on at 2 o'clock the other morning. 6RJ is still working away and can sleep that night. We were very pleased to hear 6AS back on 7 Mc. The old rig was silent during his stay in Camaroon. Alex found cobwebs and

mice had to be removed before closing the big switch.

Heard 6WD keeping Wyalupshire on the map with a nice 7 Mc. c.w. phone. We expect to hear some phone from him shortly. 6BG is preparing his rig for 7 Mc. band. He has been running 14 Mc. phone but doesn't work as much DX as he did on c.w. 6ME the other day, by turning on phone and working plenty outside VK, 6GC has been bitten by the building bug. We hope to hear Bob's rig working before long. Don't know where he is at the moment. 6RJ wants to have a 7 foot rack and panel job. 6JN should be a going concern any day now from Kalimunda. John had some oscillator trouble for while, but has cleared that up in fine style. 6MB has worked 6VY, 6XZ, 6PQ, 6RQ, 6RJ and is very pleased with this effort because his QTH is not the best for DX contacts. 6NL has been experimenting with folded antenna arrays and has been getting encouraging reports from all round the globe. What has the centre impedance gone up to now Val?

DX OF THE MONTH BY VK6RU

The past month of May has been quite a disappointment in the DX field, both the 14 and 28 Mc. bands. Conditions have been poor in some respects, as although conditions have been bad, the DX man's interest has waned somewhat, thereby causing less QRM and competition to the ever-vigilant individual who is prepared to work and wait for the band to open.

A number of the rare birds have been landed, no doubt due to the above happening.

Usually the winter months show a decided falling off in band conditions, and after the lucrative summer months with the keen interest shown at that time, one is almost ready to give the game away.

28 Mc. Phone. Europe.—On the few occasions that this Continent has shown any promise some good DX has been had unfortunately, the band has not stayed open very long. Times have been irregular; the earliest a European has been heard and worked was 0500 GMT and the latest 1200 GMT. New Zealanders have been more fortunate in this respect, as the earlier in the day the better the band has been. The Europeans worked from here were ZB1AD, G2EZH, EIL, G6HL, G2DN, SM3ZF, OZ7TS, G8SY, G2HW, GM3XR, IION and FSGN.

Asia.—Not many Asiatic stations appear on 28 Mc. for these days apart from the Yanks in and around Japan who may be heard almost any and every morning. A few boys from Pakistan seem pretty regular on this band as AM2PF, AP2E, and AP4B have even worked a number of times. The only other QSOs with this area were CTC, H1LAQ and H1LB.

Africa.—With winter conditions prevailing this Continent has been most reliable and no trouble at all in getting the band open after the first contact. The times are 1330 to 2000 W.A.T.

The African OSOs were MD3AE, ST2GE, ZS50ZLQG, ZS6ER, MD4JG, VQ5PHD, ZS2CI, M1ZJ, ZS1KH, ZS1OF, VQ5AE, ZS0JU, VQ4RHP, ZE2JG, QM2JG, ZS1FH and USN8E. (For those passing this latter guy for the last time, you're on 14 Mc. and end up getting him back to a CQ on 28 Mc.)

North America.—We are still being worked during our mornings but reports are not as good as they were in the months past. The latest QSO with W5VY was made on 1430 hours on Saturday afternoon and this corresponded to 0930 his time, the same morning. W6s, 7s and 8s seem to provide the most QSOs from this Continent. On two occasions the band opened the long way around via South Africa from 1400-1900 hours. W9H0I and W8SSC were both worked this way.

TASMANIA

Here we are once more with a summary of the doings in this State over the past month. The June meeting was well attended and after a general discussion was agreed to a monthly meeting be held on the whys and whereabouts of monitors and the like, and many ideas were given members on the subject by J. Brown (7BJ) and R. Fulton (7AF). It is intended to hold a series of these open discussion nights and they should prove popular.

Our membership in VK7 is increasing rapidly and the hundred mark is in sight and should be reached easily before the end of the year.

Sundays were well attended and the popular time for local QSOs on the 7 Mc. band. One can hear just about every active Ham in Tasmania discussing a wide range of topics of general interest.

7FJ has just re-built, and gave me a call the other day. I hope he will feel better working the other DX.

It is to be congratulated on the arrival of a junior op. Nice work Syd. Heard 6GR one night after a long silence. You are still 8 plus at my QTH George. Lyn Brown, one of our associates

who recently acquired full membership status, is to be heard under the calls of 7QL on phone. 6QH has been grinding in order to get stability in his double conversion receiver. Heard 7AL recently on phone, we don't seem to hear much of you Tom. What's the trouble, b.c.?

The A.O.C.T. class is coming along nicely and it looks like there will be a few more call signs on the air next year. I know my office gets a thrashing these days during lunch hour with mouse sessions.

There seems to be a little confusion about the date of the VK1 broadcasts. They are at 9.30 a.m. on the second and fourth Sundays of each month, so make an effort to keep the air clear in VK7 at those times. The frequency is 7174 for the present, but I guess it will have to be changed sooner or later as a new frequency.

Worked 9YV (ex-VY) a week or two ago from his Wewak QTH. He was putting in a nice signal too.

NORTHERN ZONE

If everything goes according to plan the Northern Zone will have been organised by the time these notes are read.

Activity has been very limited this month, in fact the bands have been so good that one evening after a 7BQ and 6VY, 6RJ and 6QH decided to head on over to 7GD; only to find 7GD had gone to bed. Members knowing 7GD will receive the shock 7BQ must have received. In fact Len was so upset that he missed the chance of a lifetime and we still don't know where 7GD sleeps with his pipe in his mouth on some nights.

The biggest job in the zone during the month was the raising of 7LZ's 28 Mc. beam. This took the combined efforts of 7GD, 7BQ, TRK, 7LZ and Perc Crawford. Everything went according to plan however, and it is too early to say just how well the beam is working.

The 14 Mc. boys are having their share of fun and worries. At present 7DR and 7BQ are both having trouble getting their converters going. 7BQ has also just completed a new m.o.p.a. on this band.

7BQ is at present on holidays and took off a few nights back to visit TBR, SANL/VKT and Perc Crawford. Everything went according to plan however, and he is too early to say just how well the beam is working.

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7AB and 7XL also visited Launceston during the June long weekend. Both Doug and George are still keeping a careful watch on 50 Mc.

As usual 4 Mc. yielded the best DX, however the one station coming through most recordings were ZM2AF, OZ7CC, ZK1AJ, NY4ZQ, H1LIBE, V1P9E, WO0ZB, OZ7CC, ZK1AJ, NY4ZQ, H1LIBE, V1P9E, WO0ZB, RS6, PK1AE, COEPW, PK4OE, CT0K, VO1B and VR1A. Unfortunately EASK, V1RAZ/V1R1 and WED001 VS were away. These stations did not contact during the evenings. We unfortunately have no knowledge of early morning DX as we have been unable to find anyone willing to give up their sleep in the interests of radio.

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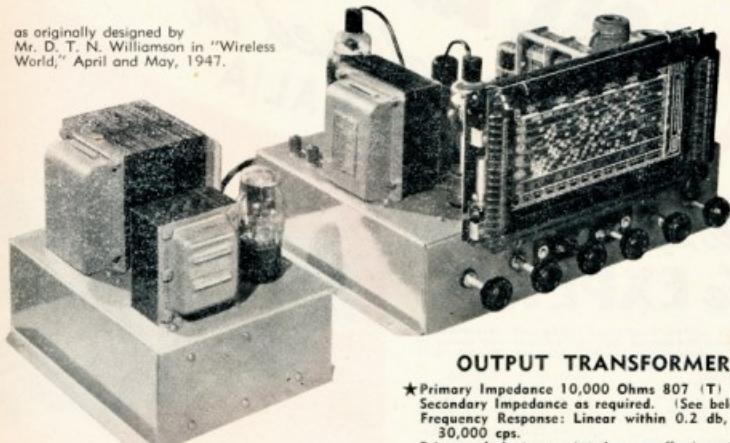
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AF8	... 8 ohm	V/Coil
AF15	... 15 ohm	V/Coil
AF10	... 500 ohm or as specified.	Line

PRICE £5/15/2

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A GUARANTEE OF DEPENDABILITY

AEGIS KC4

4.Band Tuning Unit

The most advanced
COIL ASSEMBLY
 ever offered in
 AUSTRALIA

Heres something for
 the **EXPERTS**

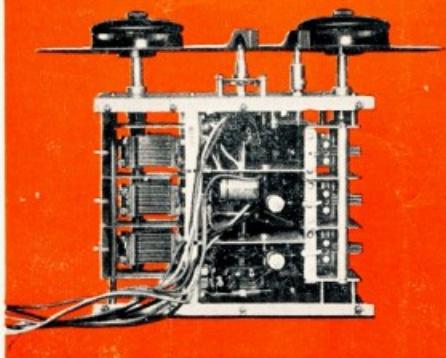
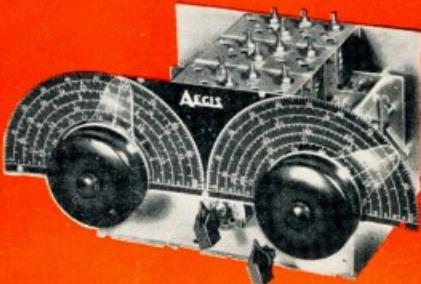
The new Aegis 4-band, bandspread tuning unit illustrated at right is definitely the answer for the amateur who desires to build his own communication receiver. Here are the plain facts of this latest Aegis triumph:

4 Wave Bands	Band Spread—5 Bands
550 Kc. — 1500 Kc.	3.5 — 4.0 Mc.
1500 Mc. — 4 Mc.	6.9 — 7.3 Mc.
4 Mc. — 11 Mc.	13.0 — 14.0 Mc.
11 Mc. — 30 Mc.	20.0 — 27.0 Mc.
	30.0 — 30.0 Mc.

Actually constructed in 3 sub-sections comprising R.F., Converter and Oscillator stages. Finally assembled in one unit, which incorporates Band Set and Band Spread endenders, together with 2 Step Motion Drive Assemblies 65/1 and directly calibrated Plastic Discs. All controls for R.F., 6SK4GT, ACT, and separate oscillator (6SK7GT) stages are already wired. Concentric air trimmers are used throughout, and the 6 section "Oak" Type Switch includes shorting banks for all coils not in use. Aerial Trimmer is brought out to front panel with 1" lift. Screws for iron core adjustment in all coils are readily accessible from top of unit, as are also the Trimmer Screws.

For use with this KC4, we recommend Aegis I.F.'s Type Nos. J22 and J23, specifically designed for communication work. A complete set of blueprints for connecting this unit plus a most comprehensive communications Receiver Circuit are supplied with each kit.

See your distributor right away for your
 Aegis KC4 Coil Assembly.



AEGIS

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